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KANT

AND HIS ENGLISH CRITICS.

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KANT

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AND HIS ENGLISH CRITICS.

A COMPARISON OF
CRITICAL AND EMPIRICAL PHILOSOPHY.

BY

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PREFACE.

In this work an attempt is made to point out the misconceptions of its real nature that still prevent Kant's theory of knowledge from being estimated on its merits, notwithstanding the large amount of light recently cast upon it, and to show in detail that the *Critique of Pure Reason* raises, and partially solves, a problem that English Empirical Psychology can hardly be said to touch. The general point of view is similar to that of Professor Edward Caird in his *Critical Account of the Philosophy of Kant*—a work without which mine could not have been written. But, whereas Mr. Caird confines himself almost entirely to a statement and criticism of Kant himself, I devote most attention to the criticisms, direct and indirect, with which Kant has recently been assailed. At the same time, I have thought it advisable to prepare the way for a defence of the Critical theory of knowledge, and for a comparison of it with Empirical Psychology, by a short statement of its main positions, as contained in the *Kritik der reinen Vernunft* and the corresponding sections of the

Prolegomena, together with the *Metaphysiche Anfangsgründe der Naturwissenschaft*. Those doctrines receive the fullest treatment which have been the object of recent attack, or which have a close bearing on prevalent modes of thought. To the *Refutation of Idealism*, the principles of *Substance* and *Causality*, and the *Metaphysic of Nature*, in its relations to Mr. Spencer's *First Principles*, a good deal of space is therefore allotted. The negative side of the *Critique*, setting forth the limitations of knowledge, is entered into only so far as seemed necessary to complete the consideration of the positive side, and to exhibit the divergence of the Critical distinction of Phenomena and Noumena from the Spencerian opposition of the Knowable and the Unknowable, to which it bears a superficial resemblance. The direct criticisms which I examine are those of Mr. Balfour, Mr. Sidgwick, and Dr. Hutchison Stirling, all of which rest, as I believe, upon a misapprehension of Kant's theory of knowledge, and lose their apparent force when that theory is properly understood. Minor objections, and objections such as those of Mr. Shadworth Hodgson, which recognize the essential distinction of Metaphysic and Psychology, I have not considered. Nor, in examining recent Empirical Philosophy, as the most formidable rival of Critical Idealism, have I thought it necessary to go beyond the typical systems of Mr. Spencer and the late Mr. Lewes. By far the larger part of the work is occupied with the exposition and defence of Kant's system, and with the contrast of Criticism and Empiricism in their fundamental doctrines. In the last two chapters, however, an attempt is made to show that while right in principle, the theory of knowledge presented in the *Critique* is not altogether free from incoherent elements incompatible with its unity and completeness.

Besides Mr. Caird's *Philosophy of Kant*, I am most largely indebted to Professor Green's *Introduction to the Works of Hume*, and his articles on Mr. Spencer and Mr. Lewes in the *Contemporary Review*, and to the *Encyklopädie* and *Logik* of Hegel.

The greater part of the criticism of Mr. Spencer's Philosophy in the ninth and tenth chapters has already appeared in the *Journal of Speculative Philosophy.*

QUEEN'S UNIVERSITY,
KINGSTON, CANADA.

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KANT

AND HIS ENGLISH CRITICS.

CHAPTER I.

THE PROBLEM AND METHOD OF THE *CRITIQUE OF PURE REASON.*—MR. BALFOUR'S CRITICISM OF THE TRANSCENDENTAL METHOD.

IT is no longer possible for any one but a superficial reader of the *Critique of Pure Reason* to regard Kant as a benighted "a priori" philosopher of the dogmatic type, afflicted with the hallucination that the most important part of our knowledge consists of innate ideas, lying in the depths of consciousness and capable of being brought to the light by pure introspection. The labours of recent commentators have compelled us to see that this short and easy method of disposing of the Critical Philosophy is altogether unsatisfactory. At the same time I cannot help thinking that much of recent criticism rather shows the need on the part of the critics of a closer acquaintance with Kant's writings and mode of thought, than calls for direct refutation. I am far from saying that Kant has produced a final system of philosophy, admitting of no development, and demanding only a docile acceptance. All that I mean is, that along with much that is imperfectly worked out, and even with some self-contradiction, he has given us a philosophy which must be regarded, not as a rival of English psychology, but rather as above and beyond it. I cannot, therefore, accept so sweeping a condemnation of his system and method as that which is contained in the very strong language of Dr. Hutchison Stirling, who regards the system as "a vast and prodigious failure," and the method as only "a laborious, baseless, inapplicable, futile superfetation." So very harsh a judgment, modified even as it afterwards is by the remark that "Kant nevertheless abides always, both the man and the deed belonging to what is greatest in modern philosophy,"[1] seems to show a plentiful lack of intellectual sympathy on the part of the critic. In spite of the minor contradictions and the incomplete development of his theory, Kant has opened up a "new way of ideas," which should win a general assent the moment it is seen as it really is. I propose, therefore, to state in my own way the main points in his theory of knowledge; and as the critical philosophy is most likely to commend itself to living thinkers when brought into connection with the difficulties they feel in regard to it, I shall interweave with this statement a review of recent criticisms, and an examination of the empirical psychology of our own day.

Not long ago Mr. Balfour gave us a vigorous criticism of the general method of Kant, which, if conclusive, would virtually foreclose any more detailed inquiry into the merits of the philosophy developed by its aid. That method he regards as radically unsound, and the main propositions to which it conducts us he therefore holds to be unproved assumptions. I am aware that Mr. Balfour directs his artillery rather against those whom he calls Neokantians or Transcendentalists than against Kant himself. I cannot, of course, hold myself responsible for the opinions of all who may be called, or who may call themselves Transcendentalists; but in so far as such writers as Mr. Green and Mr. Caird are concerned, I think I may venture to say that, as they undoubtedly conceive of the problem of philosophy very much as Kant conceived of it, and seek to solve it by a method similar, if not identical, with his, whatever applies to Transcendentalism applies in all essential respects to Critical Idealism as well.

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[1] *Princeton Review*, Jan. 1879, p. 210.

In opening his battery against Transcendentalism, Mr. Balfour has occasion to state the problem of philosophy as he understands it. But unfortunately he has done so in terms that are fatally ambiguous. "The usual way," he says, "in which the Transcendental problem is put is, How is knowledge possible?" . . . But "the question should rather be stated, How much of what *pretends* to be knowledge must we accept as such, and why?" . . . Now, "if we were simply to glance at Transcendental literature, and seize on the first apparent answers, we should be disposed to think that the philosophers of this school assume to start with the truth of a large part of what is commonly called Science—the very thing which, according to my view of the subject, it is the business of philosophy to prove." . . . Nevertheless "Transcendentalism *is* philosophical, in the sense in which I have ventured to use the term: it *does* attempt to establish a creed, and, therefore, of necessity it indicates the nature of our premises, and the manner in which the subordinate beliefs may be legitimately derived from them."[1]

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[1] *Mind, XII.*, p 481. The article from which I quote is reprinted with little change in Mr. Balfour's *Defence of Philosophic Doubt.*

Now Kant would certainly have been willing to admit that the problem of philosophy might be thrown into the form, "How much of what pretends to be knowledge must we accept as such?" and he would also have admitted that it is the business of philosophy to prove "what is commonly called science;" but as certainly he would have insisted at the outset upon defining more exactly what is to be understood by "knowledge" and "science." For, manifestly, Mr. Balfour's words may be taken in two very different senses; they may mean either (1) that philosophy has to prove the truth of the special facts of ordinary knowledge and the laws embodied in each of the special sciences, or (2) that philosophy must show from the nature of our knowledge that the facts of ordinary knowledge and the laws of the special sciences rest upon certain principles which make them true universally, and not merely for the individual. I cannot help suspecting, from the general tenor of his criticism, that Mr. Balfour has allowed these very different propositions to run into one in his mind, so that, having shown, as he very easily may do, that Kant does not prove the first, he rashly concludes him to have failed in proving the second. Surely Mr. Balfour does not seek to lay so heavy a burden on philosophy as is implied in the demand that it should prove the truth of the special facts of observation and the special laws of the natural sciences, or even the generalizations of empirical psychology. No one, I should think, would seriously ask a philosopher to prove it to be a fact that we have experience, say of a ship drifting down a stream, or that the three interior angles of a triangle are equal to two right angles, or that bodies attract each other in proportion to their mass and inversely as the square of the distance. Manifestly if philosophy is to attempt a task of this kind and magnitude, it must go on for ever without reaching any final conclusion, since the special facts and laws of nature are infinite in number. Philosophy has certainly to do with the proof of knowledge, but he would be a very foolish philosopher who should attempt to unite in himself the functions discharged by all the special sciences. "The sceptic," says Mr. Balfour, "need not put forward any view of the origin of knowledge." The sceptic is a privileged person, and of course need not put forward any view of anything; but supposing him to be reasonable, he will not dismiss without enquiry the view of those who hold that the question as to "the origin of knowledge" is *the* question of philosophy. The follower of Kant, at any rate, must refuse to have the formula, which best expresses the problem of philosophy as he understands it, replaced by the very different formula, How much of what pretends to be knowledge must we accept as such? if by this is meant, How are we to show that this special fact or law is true? The special facts of ordinary knowledge and the special laws of the natural sciences, are not propositions which the philosopher seeks to prove, but data which he assumes. Of all our knowledge the conclusions reached by mathematics and physics are those which we have least doubt about; and hence I do not understand how Mr. Balfour can object to the philosopher assuming to start with "the truth of a large part of what is commonly called science." I have no objection to find with Mr. Balfour's assertion, that a philosophy must consist partly of premises and partly of inferences from premises. I should certainly prefer another mode of expression, from the fact that the process of inference, according to the account given of it by formal logic, does not allow of any inferences except those which are purely verbal; but as Mr. Balfour probably only means to say, that there are certain facts which do not stand in need of proof by philosophy, and certain conclusions which it is the business of philosophy to prove, I am content to accept his way of stating the case. My objection lies against what he very strangely supposes to be the "premises" of transcendental philosophy. The actual premises of Kant are the special facts of ordinary experience in the widest sense, and especially the facts and laws of the mathematical and physical sciences. No doubt the particular philosophical theory we adopt will cast upon these a new light, but it will in no way alter their nature or validity. Should the Critical explanation of the essential nature of knowledge be accepted, a new view of the process by which knowledge has been obtained, and therefore a new view of the general character of the objects of knowledge will grow up, but the facts themselves will remain just as they were before. The philosophical theory, that the existence of concrete objects, apart from the activity of intelligence by which they are constituted for us, is an absurdity, does not throw any doubt upon the scientific truth, that bodies are subject to the law of gravitation. The evidence for a scientific law is purely scientific. The philosopher who should attempt, from the general nature of knowledge, to establish a single individual fact, or a single specific law of nature, would justly draw upon himself the censure of taking the "high priori road" which leads only to the kingdom of shadows. From a general principle only a general principle can be inferred: the proof of a special law demands special evidence. If the philosopher, by a mere examination of knowledge, is able to establish a single qualitative fact, why should he not evolve a whole universe out of his individual consciousness? If, however, the sceptic is so unreasonable as to ask him to prove the truth of any such fact, he will at once transfer the responsibility to the physicist: all that he pretends to do is to show that the law is not a mere fiction of the individual mind, but can be accounted for by the very nature of human intelligence. On the other hand, should the philosophical theory advanced be such as to reduce our knowledge to a mere series of individual feelings, we shall of course have to admit that the facts of individual consciousness have no universality or necessity; we shall, in other words, be compelled to say, that there are no facts, in the ordinary sense of the term, but only supposed facts, or, if you will, fictions. It will no longer be safe to say that there is a real connection between objects, but we may at least say that there is for us a connection between what we ordinarily understand by objects. The empirical philosopher, with the fear of Mr. Mill before his eyes, may hesitate to say that two and two are four, but at least he will feel entitled to say that two objects added to other two are for us four.

It may be, however, that Mr. Balfour admits all this. In that case the problem of philosophy will be for him, as for Kant, What are the universal principles which are presupposed in the facts of our ordinary and scientific knowledge? But if so, I must take the strongest exception to Mr. Balfour's way of stating the "premises" of Kant and his followers. The problem being to show how we may justify the knowledge we all believe we possess, by an exhibition of the nature of our intelligence as manifested in actual knowledge, it is manifestly inadequate and misleading to say, that the Transcendentalist begins by begging the sceptic to admit "that some knowledge, though it may only be of the facts of immediate perception, can be obtained by experience; that we know and are certain of something—*e.g.*, of a coloured object or a particular taste." The Transcendentalist, unless I am altogether mistaken, would not state the matter in that way at all. Kant at least would not ask anybody to admit that he has *just a little* knowledge; much less would he ask him to grant that he has a consciousness of a coloured object or of a particular taste. The difficulty is not at all a quantitative one. Nothing is gained by reducing the facts "postulated" to a minimum, so long as the sceptic is asked to admit a fact at all; and if he does admit such a fact as the immediate perception of a colour or a taste, why should he refuse to grant the carefully established laws of the special sciences? Is the evidence for the consciousness of the laws of gravitation less cogent than the evidence that a coloured object is perceived? What the sceptic should object to is not the mere *number* of facts assumed as true, but that *any* facts are assumed as true, in the sense of being more than phenomena of the individual consciousness. What I object to, the sceptic would say, is the assumption that the particular facts and laws which no doubt exist in our consciousness, are universally and necessarily true; I ask you, therefore, to prove the supposed absoluteness, objectivity or necessity—state it as you please—of these facts and laws. The request is perfectly reasonable, and the father of Transcendentalism claims that he has in all essential respects resolved the sceptic's doubt. It is in the process by which he endeavours to prove that there are universal and necessary principles underlying knowledge and making it real or objective, that Kant is led to refer to such simple experiences as the consciousness of a coloured object or of a particular taste; but he does so, not because he has more faith in such immediate feelings than in the established laws of science, but, on the contrary, because he has no faith in them at all. The argument is indirect, and proceeds somewhat in this way: If it is to be maintained that all external concrete objects are *without or outside of consciousness,* an attempt must be made to account for knowledge from a mere "manifold" or detached series of impressions—as, for example, the impression of a bright colour or a sweet taste; but from such an attenuated thread of sensation no explanation of the actual facts of our experience can be given. Kant, in other words, argues that we *cannot* suppose an unrelated feeling to be a constituent of real knowledge. Mr. Balfour completely misses the point of the reasoning, and actually supposes Kant to be begging the sceptic to grant him the fact of a little knowledge, in order that he may go on to extract from it a great deal more.

Philosophy presents itself to the mind of Kant with a certain antique largeness and nobility of conception. Psychology, which with us is usually made to bear the whole burden and strain of philosophical thought, he regards as a special branch of knowledge, ranking in scientific value along with Chemistry and standing below those sciences which, as admitting of mathematical treatment, assume the most precise and the most systematic form.[1] Kant's impulse to philosophize arises in the first place from his interest in such purely metaphysical questions as the existence and nature of God, the freedom of the human will, and the immortality of the soul. His ultimate aim is, in the language of Mr. Lewes, to lay the "foundations of a creed." But he soon discovers that in our common knowledge, and in the mathematical and physical sciences, certain principles are tacitly assumed, which are not less metaphysical than those commonly bearing the name. We are perpetually making use, for example, of the law of causality, and the natural philosopher assumes the truth of such principles as the indestructibility of matter. Thus an examination into the nature of human knowledge is forced upon us, both as a means of determining the limits of our real knowledge and of justifying, if that be possible, the universal and necessary principles which are imbedded in ordinary experience and the special sciences. Until we determine the essential conditions of human knowledge, it seems vain to attempt the solution of the more ambitious problem as to the existence of supersensible realities. Hence Kant seeks, by starting from what every one admits, to discover whether or no those purely metaphysical questions are capable of any solution. And it is his special charge against all previous philosophy that, from neglect of this preliminary criticism, it has fallen either into a dogmatism that can give no reason for its existence or into a scepticism that can only be a temporary phase of thought. His aim is thus in one way dogmatic, but his is a dogmatism which comes as the crowning result of a critical investigation of the nature of knowledge, which has enabled us to distinguish demonstrable from indemonstrable or problematic assertions. The *Critique of Pure Reason* undertakes the preliminary task of determining what are the ultimate constituents of knowledge, and this cannot be done without drawing in outline the sketch of a true metaphysic, the details of which, as Kant asserts, can easily be filled in by any one who has firmly apprehended its main features. Hence we are told that "we must have criticism completed as a science before we can think of letting metaphysic appear on the scene."[1] Metaphysic is thus compelled to undertake a kind of investigation which is not required in other branches of our knowledge. Other sciences may properly occupy themselves with the agreeable task of increasing the sum of knowledge; metaphysic, before it can make a single dogmatic assertion, must first prove its right to exist. Failure to apprehend this fact has led in the past to aimless wandering in the region of mere conjecture and to the continual alternation of over-confident dogmatism and shallow scepticism. The first and most important task of philosophy is therefore to prove that there are metaphysical propositions implied in our ordinary knowledge, which can be established upon a secure foundation, and, as it turns out, that the propositions ordinarily known as metaphysical do not, at least by the theoretical reason, admit of either being proved or disproved. Thus the enquiry into the nature of knowledge proves to be at the same time a discovery of the limits of knowledge.

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[1] *Metaphysische Anfangsgründe der Naturwissenschaft,* ed. Hartenstein, 1867, p. 361.

The first problem of critical philosophy—one that is necessarily bound up with the second—is, How can there be any knowledge of real or objective existence? The question is not, as Mr. Green has pointed out,[2] *Is* there real knowledge? but, *How* can there be real knowledge? It is true that we may accept the first mode of statement if, like Mr. Balfour, we interpret it to mean, How am I to distinguish real from pretended knowledge? but, on Kant's view, this is only another and less definite way of asking how knowledge is possible. For we can separate real from apparent knowledge only by pointing out what are the essential conditions of there being any real knowledge for us, and this is just another way of asking, How is knowledge at all possible? By determining what are the conditions of real knowledge, we at the same time determine indirectly what is not real knowledge. Now, an enquiry into the nature of knowledge must in some way comprehend all the facts that make up the sum of knowledge, and hence, to find the problem workable at all, we must get these facts into a convenient and portable shape. But this has in large measure been already done for us. Our common-sense knowledge of the world of nature and the world of mind has been carried up into a higher form in the mathematical and physical sciences on the one hand, and in psychology on the other, and from these we may therefore start as from facts that every one admits. Thus the general and somewhat indefinite question, How is knowledge possible? breaks up into the two closely connected questions, How is mathematical knowledge possible? and How is scientific knowledge possible? We are not here concerned with the special truths of mathematics or physics, or even of psychology, but only with the necessary conditions without which there could be no mathematical or physical or psychological knowledge. The special truths of those sciences we assume to be true: they are the facts from which we start, not the conclusions we desire to reach. Our object is to discover, by a consideration of the nature of human intelligence, what are the essential conditions without which there could be no sciences of mathematics, physics, and psychology.

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[1] *Prolegomena*, Mahaffy's translation, p. 11.

[2] *Contemporary Review*, xxxi., p. 26.

As to Kant's method of solving this problem, we may say that, like the scientific discoverer, he sought for a hypothesis adequate to account for the facts in their completeness. The only exception which can properly be taken to this way of putting the matter is, that it is not so much a statement of the peculiar method of Kant, as of the method by which all knowledge is advanced. It is rather a truism than a truth that the discoverer must cast about for some hypothesis that shall harmonize with the facts he is seeking to explain. The merit and characteristic difference of Kant's method lies, not simply in setting up tentatively a hypothesis and testing it by admitted facts, but in the comprehensiveness with which he has stated the problem of philosophy, and in the special solution he proposes. Like all discoverers, he began with certain facts which he sought adequately to explain, and like them he was assisted in making his discovery by observing the failures of his predecessors. This accounts to a great extent for the peculiarities of his mode of statement. All through the *Critique*, he combines with a statement of his own theory of knowledge a polemic against the theories of others. This union of exposition and criticism makes it peculiarly difficult to follow the course of his thought. In a sense, his method is dialectical; that is to say, he brings forward certain propositions as if they were precise statements of his own theory, when in reality they are merely stages in the gradual evolution of his thought. Thus he not infrequently speaks of "sensible objects," or "objects perceived by the senses," as if sense of itself were an independent source of knowledge, instead of being merely, in the critical meaning of the term, a logical element in knowledge. So also he speaks of an abstract conception and a category, of an analytical judgment and a synthetical judgment, and of experience in its simple and its philosophical sense, as if each of these terms belonged to the same stage of thought. In truth it must be admitted that Kant was, to some extent at least, the victim of his own mode of statement; for while he always keeps the ordinary conceptions in regard to knowledge distinct from the purely critical formulation of it, it cannot be said that he has completely harmonized in his own mind the two very different points of view.

The distinction, then, between the data from which he starts and the philosophical theory by which he endeavours to account for them, is never absent from Kant's mind. It does not seem to have occurred to him that any one would refuse to admit that mathematics, physics and psychology do as a matter of fact contain propositions that are true within their own sphere. Repeatedly he states this assumption in perfectly definite language. Mr. Balfour himself quotes from the *Critique* Kant's remark, that, "as pure mathematics and pure natural science certainly exist, it may with propriety be asked how they are possible; for that they must be possible is shown by the fact of their really existing." And many other passages might be cited to the same effect. Thus he remarks in the *Prolegomena*, that pure mathematics is "a great and well established branch of knowledge,"[1] and again in speaking of the mistake of supposing mathematical judgments to be analytical, he remarks that had Hume but seen that his onslaught on metaphysics was virtually an attack on mathematics as well, "the good company into which metaphysic would thus have been brought would have saved it from the danger of a contemptuous ill-treatment, for the thrust intended for it must have reached mathematics, and this was not, and could not be Hume's intention."[1] Kant was mistaken about Hume's intention, as Mr. Mahaffy and others have noted, but as to his own opinion there can be no possible mistake. But perhaps the clearest passage of all is that in which he says that "pure mathematics and pure science of nature had no occasion for such a deduction, as we have made of both, for *their own* safety and certainty, for the former rests upon its own evidence and the latter upon experience and its thorough confirmation. Both sciences therefore stood in need of this enquiry, not for themselves, but for the sake of another science, metaphysic."[2] Kant therefore invariably assumes the truth of the mathematical and physical sciences, and only asks how we are to explain the fact of such knowledge from the nature of knowledge itself. It is true that he qualifies this unlimited statement so far as to admit, that the special sciences are ultimately dependent for their truth upon philosophical criticism, but the qualification applies, not to the special truths which form the body of those sciences, but to the universal principles which they take for granted, and which, strictly speaking, belong to metaphysic. "The possibility of mathematics," he says, "may be conceded, but by no means explained without [philosophical] deduction."[3] That is to say, while no one can doubt that mathematical judgments are universal and necessary, this must be an article of faith, until we are shown philosophically the ground of their universality and necessity. But this does not mean that proof is demanded of the special truths of mathematics, but only that, in accounting for knowledge, we must find out the secret of their universal character. The problem of the *Critique* is, therefore, the purely metaphysical one as to the objective validity of the knowledge we possess, not the scientific problem as to the evidence of the truth of special laws. No doubt Kant would have admitted that a failure to account for the possibility of real knowledge must throw doubt on the absolute truth of the conclusions of mathematics and physics, since these sciences cannot get along without making use of principles which they do not seek to prove. But Kant's attitude towards the scepticism of Hume, and his unwavering faith in the truth of the sciences, shows us that his conclusion in that case would be, not that science has no truth, but that the metaphysical theory propounded is marred by some inherent flaw. The extreme scepticism which Mr. Balfour's language suggests, would have seemed to him a voluntary creation of self-tormenting difficulties. The truth of mathematical propositions as such was in his view necessarily mathematical, and of physical propositions physical, and it would have appeared to him mere folly to ask philosophy to prove what no one denies. It is surely enough, he would have said, if I show that my system is consistent, and alone consistent, with the undoubted truths of mathematics and physics.

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[1] Proleg. tr. § 6, p. 41.

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[1] Proleg. tr. § 4, p. 29. [2] Ibid., § 40, p. 114. [3] Ibid., § 12, p. 48.

In developing his proof, as has been said, Kant was warned by the utter failure of previous dogmatic systems—a failure which he regards Hume as having proved beyond dispute, so far at least as the principle of causality is concerned—that the mode of explanation must follow a completely new track. The inherent vice of those systems betrays itself in the double defect (1) that they assume knowable objects to exist, in the fulness of their attributes and in their relation to each other, quite independently of our intelligence, and (2) that, as a consequence, they suppose that we can, by mere introspection or analysis, obtain judgments which hold good of things in themselves, and which therefore are true not merely subjectively or for us as individuals, but objectively or universally and necessarily. This twofold assumption is a characteristic mark of dogmatism. In the statement of his own theory Kant starts provisionally from the dualism of knowledge and reality and seeks to develop a true theory by a gradual transformation of the false theory. Adopting the objection made by Hume against the ordinary proof of causality, and expressing it, to borrow the language of mathematicians, in its utmost generality, he points out that the principle upon which it goes cannot possibly account for the fact of real knowledge. (1) If known objects, as the dogmatist assumes, are without consciousness, and yet are known as they exist, we must, to account for that knowledge, say that we go to them and apprehend them one by one, and also observe that they are permanent, that they undergo changes, and that they act and react on each other. Our knowledge of concrete things and of their succession and co-existence is thus resolved into a series of particular perceptions. Philosophically, therefore, the dogmatist tries to account for our knowledge of real objects by saying that objects are revealed to us in the individual apprehensions or perceptions which come to us from without. Now, if in the meantime we grant that things exist without consciousness just as they are known, it is plain, that so far as our actual knowledge goes, and so far, therefore, as the dogmatist is entitled to affirm, knowledge will resolve itself into a succession of feelings or ideas in consciousness. But the most that we can philosophically base upon a series of feelings or ideas is a knowledge of particular objects, particular series of events, and particular co-existencies. This was what Hume pointed out, so far as the sequence or causal connection of events is concerned. I observe flame to be attended with the feeling of heat, and finding this particular sequence repeated frequently in my consciousness, I infer that flame is actually connected with heat, and that the one cannot exist without the other. The inference, however, is unwarranted. All that I can legitimately say is, that in my past experience as remembered, and in this particular experience I am now having, flame and heat occur successively. Individual perceptions of such sequences I have, but the inference based upon them, that these could not be otherwise, arises merely from the nature of my imagination, which illegitimately leaps beyond the immediate perception and converts it into a universal rule. On perception, as we may say, generalizing Hume, no judgment in regard to the existence of real objects, or of their connection or co-existence, can properly be founded. The affirmation of the reality of the objects, or of the relations of objects, is something that we add to perception, not something actually given in perception. (2) This leads us to ask whether we are more successful when we attempt to prove the permanence, the causal connection, or the interaction of objects, from *conceptions* instead of perceptions. Now, conceptions are for the dogmatist simply ideas in the mind, which are completely separated from things without the mind. The conceptions of the permanence, the changes and the mutual influence of substances, are separated by an impassable gulf from the substances themselves. It is thus perfectly evident that we cannot legitimately pass over from the conception of a substance to the substance itself. Completely shut up within our own minds, we shall vainly endeavour to break through the walls of our prison. We can certainly frame judgments in regard to the ideas which exist in our minds, but we cannot show them to have any application to real objects or events. Thus, having the conception of substance, we may throw it into the form of the judgment, "Substance is that which is permanent." Such a judgment is no doubt correct so far as our conception is concerned, and is even necessarily true in the sense that it is free from self-contradiction or conforms to the logical principle of identity, but it has no demonstrable relation to the real substance we suppose to exist without consciousness. All that we have done is to draw out or state explicitly what was contained in the conception with which we started, and however necessary and valuable this process may be in making our conception clear, it is valueless as a means of proving the reality of an object supposed to correspond to it. The mere analysis of the conception of substance no more shows that there are real substances *in rerum natura* than the analysis of the conception of a hundred dollars entitles me to say that I have a hundred dollars in my pocket. Now, dogmatism never gets beyond purely analytical or tautological judgments of this kind; the account it gives of the nature of knowledge is such that we cannot understand from it how it is possible to have the experience of real objects or of their connection at all. We may, therefore, summarise Kant's criticism of previous philosophy as follows:—Knowledge of real objects existing beyond the mind, and of their connection and interaction, must be obtained either from perception or from conception; but perception cannot take us beyond the consciousness of a particular object as now and here, and conception tells us nothing at all about objects; hence dogmatism cannot explain the possibility of knowledge at all.

So far Kant has closely followed in the wake of Hume, at least as he understood him; the main difference being, that whereas Hume shows the imperfection of dogmatism only in regard to the principle of causality, Kant universalizes the criticism and throws it into the comprehensive form: real knowledge cannot be accounted for from mere perceptions or from mere conceptions. It is in fact the great merit of Hume in Kant's eyes, that he shows with such clearness wherein the weakness of dogmatism consists. All *a priori* judgments, *i. e.* judgments derived from conceptions, seem to be merely analytical, and therefore, however accurately I may analyse the conception of cause, I can never get beyond the conception itself. Hence, as Hume argues, the supposition that the conception of causal connection proves a real connection of objects is a pure assumption. The moment I am asked to explain how I get the knowledge of objects, I must refer to my perceptions, and no perception can entitle me to make universal and necessary affirmations. Expressed in the language of Kant, Hume's difficulty is this: How can the conception of cause be thought by the reason *a priori*, and therefore possess an inner truth independent of all experience?[1] And this question, when put universally, assumes the form, How are synthetical judgments *a priori* possible? Hume indeed does not content himself with pointing out the purely subjective character of the notion of causality, but endeavours to explain how we come to suppose a necessity where none exists; and in this Kant refuses to follow him. A series of perceptions can never yield necessity, for, however frequently one given perception follows another, we cannot thence conclude that the one *must* follow the other. Our belief in the connection of perceptions is therefore explained by the psychological law of frequency or repetition: we naturally suppose that what is often associated is really connected, and thus by the influence of custom we confuse an arbitrary association of our ideas with a real connection of objects. Accepting Hume's criticism of dogmatism, and rejecting his psychological account of the principle of causality, Kant endeavours to show that we *can* have a synthetical *a priori* judgment of causality, as well as other judgments of the same kind which Hume altogether overlooked.

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[1] This mode of statement is provisional, and suggests that very abstract opposition of thought and reality which it is the main aim of Kant to overthrow. The required correction is given afterwards, more particularly in the *Analytic*. See below, Chap. iii.

We can now see why Kant states the problem of philosophy as he does, and what is the general method he is likely to follow in attempting to answer the question, How are synthetical judgments *a priori* possible? As the failure of dogmatism evidently arises from the assumption, which no one prior to Kant had questioned, that objects and events exist beyond consciousness as they are known, it was only natural to ask whether this assumption may not be a mistake. The general answer therefore given by Kant to the problem he has himself propounded, is that known objects instead of being passively apprehended, are actively constructed by intelligence as operating on the material supplied by the special senses. The existence of things in themselves is not indeed positively denied, but such things are shown to be absolutely distinct from the objects we actually know. The theory that intelligence constitutes known objects instead of passively apprehending them, is held to be the only theory that explains the facts as a whole. In the development of his proof of this theory we find Kant continually seeking to intensify the persuasiveness of his own solution, by showing the inherent imperfection of the dogmatic conceptions previously accepted as conclusive. His method of proof thus takes, in many cases, an indirect form. All through the first part of the *Critique*, we find him asserting that unless we admit the activity of intelligence in the constitution of knowledge, we are reduced to a "mere play of representations," or, what is at bottom the same thing, we are compelled to attempt the impossible feat of extracting reality from subjective conceptions. These two things always go together in Kant's mind: the impossibility of justifying universal and necessary judgments from a mere manifold of sense, *i. e.* from an arbitrary succession of feelings, and the impossibility of accounting for knowledge on the supposition that known objects are things in themselves independent of our intelligence. When he proposes to show why mathematical judgments are apodictic and yet refer to individual objects, Kant points out, on the one hand, that such judgments cannot be obtained by an analysis of conceptions, and on the other hand, that their demonstrative character is unintelligible if we suppose the objects of mathematics to be known by particular observations of sense or by empirical measurements. In proving the principle that the knowledge of permanent substances is one of the conditions of a real knowledge of objects in space, he shows, that apart from the schema of the "permanent," we can have only a number of unrelated feelings, which by no possibility can be identified with real substances; and in confirmation of this criticism he remarks, that the ordinary derivation of permanent things from the conception of substance assumes that an analytical or tautological judgment is capable of bridging the gulf between mere conceptions in the mind and things in themselves. So, in his proof of causality, he seeks to show that our knowledge of a real sequence of events can be accounted for, neither from an arbitrary train of feelings, coming one after the other without determinate order or connection, nor from the mere conception of cause as we find it lying ready-made in our minds, for in the former case we should not be entitled to say that there are real sequences, but only that there are sequences of our perceptions, and in the latter case we should have no criterion by which to distinguish the conception of cause from an arbitrary creation of the imagination. Again, the existence of a primary self-consciousness he establishes, both on the ground that a succession of states of consciousness, not bound together by a single identical self, will not account for the systematic coherence and unity of our actual experience, and on the ground that the mere fact that we always think of the self as one does not prove the self to be one in its own nature. Lastly, in the *Refutation of Idealism* this indirect method of proof assumes an open and explicit form; the argument being, that the "psychological idealist" can never show that the mere sequence of ideas in the individual mind could give us the knowledge of real substances as permanent; but that, on the contrary, we could never have experience of the self as in time, had we no knowledge of real objects in space. It should be observed, however, that this polemic against dogmatism might be eliminated from Kant's proof without really destroying its intrinsic force. The transcendental proof has assumed this form chiefly from historical causes, and Kant, in stating it as he does, only intends to commend to the lips of the dogmatist the ingredients of his own poisoned chalice. The conclusiveness of the theory does not lie in its indirect mode of proof, but in the completeness with which it accounts for the facts of experience as a whole. Kant might have stated his proof altogether in the affirmative form that known objects must exist in relation to intelligence; and, having done so, the details of the system would have consisted entirely of a presentation of the essential elements of knowledge in their relation to each other. The "manifold of sense" or "flux of sensations," is not, as Mr. Balfour seems to suppose, a ghost of Kant's raising, but the unlaid ghost of dogmatism itself. Transcendentalism "convinces by threats," only in so far as, like every other system of philosophy, it must take some account of accepted systems that differ from it.

If the above is at all a correct account of Kant's problem and method, the objections of Mr. Balfour have been virtually disposed of beforehand. Those objections seem to me to be rather the difficulties which naturally occur to one who has not seen into the heart of a system, but still looks at it from the outside, than the sympathetic and luminous criticism of one who, by the very act of mastering and thoroughly assimilating the thought of another, is already, as Fichte remarks, to some extent beyond it. This judgment can only be completely justified by an examination of Mr. Balfour's objections to the proofs of Substance and Causality, and to the *Refutation of Idealism;* but even without a special consideration of these we may see that his criticism is destitute of that sureness and lightness of touch which can only come from close familiarity with the subject.

What the Transcendental philosophy is called upon to prove is, we are told, that the principles it asserts to be true are "involved in those simple experiences which everybody must allow to be valid."[1] Now, in the first place, there is no need, as has already been indicated, to lay special stress on *simple* rather than on *complex* experiences. When Kant is speaking of experiences as data he has to explain, he places scientific truths on the same level as common-sense knowledge, and with the whole body of experience, as thus understood, he contrasts purely philosophical knowledge as a higher way of dealing with the very same facts. In speaking of the distinction between mathematical and philosophical knowledge, he remarks that the essential difference between them lies in the fact that the former sees the particular in the universal, and the latter the universal in the particular; and that those thinkers who propose to distinguish philosophy from mathematics on the ground that the former deals with *quality,* and the latter with *quantity,* have confused a difference in the objects of those sciences with the true difference, which consists entirely in the point of view from which the objects are regarded.[2] In the second place, Mr. Balfour, unless I misunderstand him, entirely misrepresents the Critical method when he speaks of certain principles—by which he means, as I suppose, such principles as the permanence of substances, the causal connection of events, and the like—as "involved in" our simple experiences. We may indeed say that the principle, say of causality, is "involved in" our experience, in the sense that an analysis of our ordinary beliefs will show that as a matter of fact we do suppose events to be really connected together. Every one is "natural philosopher" enough to know "that the property of rain is to wet, and fire to burn; that good pasture makes fat sheep; and that a great cause of night is lack of the sun." Mr. Balfour's words may therefore mean, that, while every one has the belief that there is a real connection between certain known objects, it is only by a process of abstraction that we learn to throw this belief into the general form of a principle, and to affirm, not that fire is the cause of heat, and rain the cause of wetness, but that every event has a cause. I am loth to suppose that Mr. Balfour is under the impression, that the Transcendentalist has no other means of establishing his principles than simply taking our ordinary beliefs, abstracting from the concrete or individual element in them, and straightway baptizing the residuum by the name of a "principle." For this is just what Kant means by dogmatism, consisting as it does in the mere explicit statement of what is wrapped up in our ordinary conceptions. By such a process, as he points out, we can only frame analytical judgments that do not take us a single step beyond the assumptions with which we begin. And yet it is difficult to resist the conviction that Mr. Balfour has fallen into this mistake, when we find him saying that the principles of the Critical philosophy are the "casual necessities of our reflective moments," which are supposed to be established by showing that they have "always been thought implicitly;" and that "to argue from these necessities [the principles] to the truth of things is to repeat the old fallacy about innate ideas in another form."[1] What these utterances mean, except that Kant and his followers endeavour to prove the truth of their principles by an analysis of our ordinary beliefs and conceptions, I am unable to understand. Kant's doctrine can only be assimilated to "the old fallacy about innate ideas" on the supposition that it assumes certain conceptions as true, and proceeds to "deduce," or set forth in abstract language, what is implied in them. But this is exactly what Kant does *not* do. If he has one merit more than another, it is, that he has disposed for ever of the supposition that knowledge may be justified by merely analysing the beliefs we happen to possess. Instead of admitting the absolute separation of thought and reality, an assumption underlying and vitiating the whole procedure of dogmatism, he maintains that reality is meaningless apart from its relations to thought. Mr. Balfour's mode of statement can be regarded as a correct formulation of the method of Transcendentalism, only if we suppose him to mean that the facts and laws of our whole experience imply or presuppose certain principles belonging to the constitution of our intelligence; and when it is understood in this way, his objection loses any force it seemed at first to possess. But let us consider Mr. Balfour's criticism more in detail.

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[1] *Mind,* xii, p. 483.

[2] *Kritik, Methodenlehre,* p. 478.

Let us suppose the Transcendentalist to be asked by the sceptic, how he proves the absolute truth of such a principle as that of causality. The reply, according to Mr. Balfour, will consist in begging the sceptic to admit that we "get some knowledge small or great by experience;" and having obtained this very moderate concession, he will proceed to show, that his transcendental necessities or principles are involved in it. To take a concrete instance, the sceptic may be asked whether he admits that we have an experience of *change*, and if he assents, the Transcendentalist will attempt to show that experience "is not possible unless we assume unchanging substance." Or again, the sceptic, enticed into the admission that we have an experience of real events, will be straightway forced to admit that such an experience is possible only if we virtually think of those events as under the law of causation. The essence, then, of the Transcendental method consists in showing, or attempting to show, that in questioning the truth of such principles as substantiality and causality, the sceptic contradicts himself, since he grants the reality of certain experiences and yet "makes an illegitimate abstraction from the relations which constitute an object." He has, therefore, either to rescind his admission of the reality of the object, or to admit that a certain principle is involved in his knowledge of it. "He cannot, in all cases at least, do the first; he is bound therefore to do the second."[1]

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[1] *Mind*, xii., p. 489. Cf., p. 484. On this point, see Mr. Caird's remarks, *Mind*, xiii., 111-114.

I acquit Mr. Balfour entirely of any intentional misrepresentation of the Critical method; but the fact is not the less certain, that he has given, not a fair statement, but a travesty of it. I see nothing in his way of stating the case, to distinguish criticism from dogmatism. Mr. Balfour's criticism of the *Refutation of Idealism* seems to show that he has not carried his scepticism so far as to doubt the correctness of the ordinary dualism of intelligence and nature. But without appreciating in the clearest way the essential absurdity of this dogmatic assumption, the method of Kant is simply unintelligible. The only way, Mr. Balfour evidently thinks, in which the Transcendentalist can seek to make good his position, is by analysing, after the method of formal logic, the ordinary or uncritical knowledge which we all possess. The Transcendentalist is supposed to reason, that cause, substance, &c., are really thought, although only in an obscure way, by us in our ordinary consciousness. And no doubt this is true enough; but it does not constitute the essential nerve of proof. If this were the sole force of the argument, Mr. Balfour's objection, that the principles are assumed, not proved, would be perfectly sound. The explicit statement of the implications of ordinary experience cannot prove the necessity and universality, or, what is the same thing, the objectivity of the principles in question. But the ready answer to such reasoning is, that no reflection upon our ordinary beliefs which does not in some way transform the current view of them, can justify us in asserting that they are laws of nature. What Kant maintains is, that reasoning back from our actual experience, we perceive that there are certain forms of intelligence without which there could be no experience at all. His method is, starting from our ordinary knowledge of concrete facts, and from our ordinary dogmatic judgments in regard to them, to show that we can never prove the reality of the facts, or the objectivity of our judgments concerning them, so long as we oppose thought and nature as abstract opposites. This Kant endeavours to make intelligible to the dogmatist by saying, that the observation of independent objects owing nothing to intelligence, can never yield real knowledge, because it cannot take us beyond an empirical "is." And this leads him to say, that, while intelligence may be dependent on separate impressions for its apprehension of the determinate properties of things, it is yet active in combining or relating those impressions, and so constituting them as real individual objects, real events, and real co-existencies, It is only in accordance with Kant's method of thought to say, that he who maintains the independent reality of things *as known*, and denies to intelligence any share in the construction of that reality, must attempt to account for the knowledge, which we at least seem to possess, without any other material than separate impressions. What else indeed can there be, if we assume that thought has nothing to do with the constitution of phenomenal objects? On the other hand, supposing known objects to exist only in relation to our faculties of knowledge, intelligence must have certain functions of synthesis, which at once combine into unity the detached differences supplied by the special senses, and enable us to explain how we can have a knowledge of objects other than our own subjective conceptions. For if nature exhibits everywhere a system and unity of objects, which have been actively constructed by thought as acting upon the manifold of sense, the puzzle which dogmatism completely fails to solve, at once disappears: we are no longer perplexed by the essentially unmeaning riddle, How can we pass from conceptions in the mind to objects without the mind? for objects as known are seen to have no existence except in relation to the intelligence by which they are made real. The functions of synthesis, or potentialities of combination, we may, if we please, call "relations;" but it must be observed, that they are able to operate whether they are brought into explicit consciousness or no. A function is not an "innate idea," but the potentiality of an indefinite number of cognitions. But how do we know that thought has such functions? We know it because the workmanship of thought is manifested in actual knowledge or experience, in so far as we combine or unite impressions and thus form judgments about real things. From the fact that we have scientific knowledge, we are enabled to reason back to the functions of thought by which such knowledge is made possible. We do not beg the sceptic to admit that, in our immediate perceptions, there are involved principles which we can discover by mere analysis, and that, unless this is granted, we are making "an illegitimate abstraction from the relations which constitute an object;" but we ask him to explain how there can be a knowledge of objects apart from the activity by which intelligence constitutes them. Kant has no thought of cajoling the sceptic, or anybody else, into the admission, that there is a confused metaphysic even in such simple experiences as a perception of colour or a feeling of taste; all that he asserts is, that any one who is earnest in his endeavour to account for our experience in its totality must come to the conclusion that intelligence contributes an essential element in the constitution of the known universe. And those who refuse to accept his theory of knowledge he asks to explain how real knowledge can be derived from a mere analysis of conceptions, or from the perpetual rise and disappearance of individual feelings. In this sense alone, and not in the sense that each of us has a confused consciousness of the "relations which constitute an object," do Kant and his followers hold that there can be no objects apart from the relations of thought. Mr. Balfour objects, quite in the vein of Locke's criticism of Descartes' innate ideas, that "the majority of mankind have habitually had certain experiences without ever consciously thinking them under the relations asserted to be implied in them;" and from his point of view he very naturally remarks, that, as an implicit thought is "simply a thought which is logically bound up in some other thought," it is "a mere possibility which can be said to have existence only as a figure of speech." The simple reply to this is, that when certain relations are said by the Critical philosopher to be involved or implicit in ordinary experience, all that is meant is that they are manifestations of the activity of intelligence in relation to its own objects. That the majority of mankind do not consciously bring those relations before their minds only shows that they are not metaphysicians: it does not show that they can know objects which by definition are beyond consciousness altogether, and are therefore in the strictest sense unknowable. Intelligence, as Kant maintains, has an essential nature, which comes into operation in our actual experience; but the recognition of this fact must necessarily be made only after actual experience has been had. Mr. Balfour asks how it comes that, "if relations can exist otherwise than as they are thought, sensations cannot do the same."[1] The answer of course is, that a sensation can only exist as it is felt, whereas a function of thought must operate before we can be conscious of it as having operated. A function of thought, in other words, is in itself a pure capacity or potentiality, the existence of which can only be revealed to us when, in relation to the material which it informs, it develops into actuality. The fact that people are unaware of the part played by intelligence in the combination and connection of impressions, no more shows that intelligence is a pure blank, than the ignorance of the calculus on the part of the "majority of mankind," is a proof that the judgments of pure mathematics are untrue.

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[1] *Mind*, xii., p. 482 ff.

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[1] *Mind*, xii., p. 488.

CHAPTER II.

THE A PRIORI CONDITIONS OF PERCEPTION.—MR. SIDGWICK'S VIEW OF THE REFUTATION OF IDEALISM.

WE have seen what the problem of philosophy is, the general method by which it is to be solved, and the direction in which the answer must lie. Unless it can be shown that there are synthetical judgments *a priori*, no consistent and adequate theory of knowledge is possible. Now, of all the knowledge which we possess independently of philosophical criticism, none is so sure and free from doubt as that which is embodied in the mathematical sciences. The judgments of mathematics are self-evident, universal, and necessary, and they are *a priori* or independent of all observation of sensuous things. In building up his science the mathematician does not need to verify his conclusions by the perceptions of the senses; in fact, such perceptions are for him useless, since they never could give rise to apodictic certainty. No actual measurement of the sides of a triangular object could entitle us to affirm that the two sides of all possible triangles are necessarily greater than the third side. And not only are mathematical judgments *a priori*, but they are at the same time synthetical. The ideal objects on which the mathematician operates are always individual, and are therefore given in pure perception. Hence mathematical judgments are unlike those of any other science: they rest upon perceptions, and yet they are independent of sensible observation. This is the reason why mathematics deals only with quantity to the exclusion of quality; for only quantity can be constructed or presented *a priori* in immediate perception. Mathematics is therefore distinguished from other sciences, not by the objects with which it deals, but by the way in which it looks at those objects. For pure perception is at once individual and universal. This is manifest when we consider that the science of mathematics is built up by means of definitions, axioms, and demonstrations. A definition, in the strictest sense, must be a precise, complete, and primary representation of an object, and such a definition mathematics alone can give. The object to be defined is directly originated or constructed, and hence the definition is immediately verified in a pure perception. Axioms, also, are based upon the immediate perception of individual objects, which, as constructed, are universally and necessarily true. And, lastly, mathematical demonstrations are alone self-evident, because they alone are capable of direct verification.[1] The judgments of mathematics, then, have these two characteristic marks: (1) They rest upon individual perception, and (2) they are *a priori* or independent of sensible perception. Now a proper appreciation of the nature of mathematics gives us the key to the solution of the special problem of metaphysics. For that problem is, as we have seen, to explain how conceptions and perceptions can be brought together in the unity of real knowledge; in other words, how the mind can be shown to be in actual contact with known objects. Hume, accepting the ordinary dualism of thought and things, made a divorce between conception and perception. Hence he summarily rejected all universal and necessary judgments, and admitted only particular judgments resting upon an immediate perception of concrete objects; at least, this is the logical consequence of an extension of Hume's criticism of causality to such conceptions as substance and reciprocal action. From a mere conception, as he maintained, no synthetical judgment applicable to real objects, and therefore true universally and necessarily, can be derived. But Hume, while he reasoned correctly on the basis of ordinary dualism, overlooked a consequence of it which would certainly have led him to a different conclusion had he only taken note of it. If there are no synthetical *a priori* judgments, what becomes of the judgments of mathematics, which every one admits to be universal and necessary? Either those judgments must rest on sensible observation, or they must be derived from mere conceptions; and while, in the one case, they can have no universality, in the other case they can only be regarded as mere analyses of the conceptions we find in our minds. As a matter of fact, however, mathematical judgments are at once *a priori*, and yet rest upon individual perceptions. Now, this casts doubt upon the assumption of Hume, that all *a priori* judgments are necessarily analytical. If mathematics is entitled to form *a priori* synthetical judgments, we need not despair of showing that there are *a priori* synthetical judgments of a metaphysical kind. Hume would not have allowed himself to condemn all metaphysical judgments as subjective had he not shared in the common fallacy, that mathematical judgments are analytical. And when we see that these judgments are synthetical, and yet *a priori*, the problem of metaphysic no longer seems to be on the very face of it insoluble.

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[1] *Kritik, Methodenlehre*, 478-90.

In mathematics, then, we have instances of *a priori* judgments which yet are synthetical; but, while mathematical judgments are true universally and necessarily, we find, upon looking more closely at them, that they differ from such metaphysical principles as those of substance and cause in one very important point. To entitle us to affirm that "every event must have a cause," we must be able to show that this judgment is legitimately derived, not from a perception of individual sequences, but from the conception of cause in general. No mere sequence of perceptions, however often repeated, can entitle us to say that there is an actual connection between real objects. The causal connection of events must therefore be proved, if it is capable of proof at all, entirely from the conception of cause. A mathematical judgment, on the other hand, is verifiable in an individual perception constructed by the mind *a priori*. Thus mathematics, after all, does not seem to help us so much as it at first promised to do, in explaining the possibility of purely metaphysical judgments. There is no great difficulty in showing how mathematical judgments can be synthetical. We have simply to say, that we go directly to perception, although, of course, not to empirical perception or observation, and form our judgments in accordance with the object perceived. To explain *philosophically* the possibility of mathematical knowledge, it is, however, necessary to show, from the nature of our intelligence, *how* we can have the synthetical judgments of mathematics. And this we seem to do when we say that such judgments are derived, not from conceptions, but from perceptions. But thus we escape one difficulty only to fall into another not less perplexing. The "synthetical" of a mathematical judgment we explain simply and satisfactorily by saying that we go to our perceptions and obtain the object on which the judgment rests, but how shall we explain the "*a priori*?" For we have always been accustomed to regard perception as giving us only the individual, not the universal and necessary. A perception certainly implies the immediate presence of the object perceived, and if in mathematics we are dependent upon the actual presence of the object in regard to which we form a judgment, by what right shall we affirm that the object always and necessarily is of a certain nature? There is no difficulty in understanding how we can say that this individual triangle now before us has its interior angles equal to two right angles, but what entitles us to say universally and necessarily that *all* triangles must have their interior angles equal to two right angles? The mathematician of course does not require to answer this question, because he is not dealing with the ultimate conditions of knowledge; but philosophy, having undertaken to explain the possibility of all kinds of knowledge, cannot evade the responsibility of accounting for the universality and necessity of mathematical judgments, as well as for their synthetical character.

Now, it is perfectly vain to suppose that this question can be answered on the lines of the dogmatic philosophy hitherto in vogue, according to which judgments and perceptions, thoughts and things, are separated by an impassable gulf. If the objects of mathematics are, as the dogmatist supposes, real existencies, constituted independently of our intelligence, no justification of the universality and necessity of mathematical judgments can possibly be given. For, in the first place, if mathematics deals with real objects or things in themselves existing apart from our consciousness of them, it is evident that, whether such objects exist or no, at least they cannot be known by us as they are in themselves. It is self-evident that the properties of real things cannot at the same time be perceptions in us. But, in the second place, even if we waive this objection, we cannot explain how the mere succession in which real objects are revealed to us can form the basis of universal and necessary judgments. If the object perceived has a nature of its own, quite apart from any relations to our faculty of perception, we are necessarily dependent upon the actual perception of the moment for any knowledge of it we may possess. What the object may be when it is not perceived we are utterly unable to say. The only judgments we can form must therefore be particular. We may say, This object now perceived is of a certain nature; but we cannot say, This and all objects of which this is a type must always be of a certain nature. The universality and necessity of mathematical judgments must therefore be explained in a very different way from that relied upon by the dogmatist. The first step towards a true theory must consist in denying that the objects of mathematics are either, as Clarke supposed, things in themselves, or relations of things in themselves, as was held by Leibnitz. The justification of the apodictic character of mathematics we must seek, not in the nature of things lying beyond consciousness, but in the constitution of our intelligence itself. We have to explain how there can be perceptions which yet are *a priori*, and the explanation, it is manifest, must be of such a character as to revolutionize our ordinary conception of the relation of thought to its objects.

Now mathematics, as we can at once see, deals with perceptions which are determinations or limitations of space and time. "Geometry is based upon the pure perception of space, mathematics obtains its conception of number by the successive addition of units in time, and pure mechanics at least cannot reach its conception of motion without making use of the idea of time."[1] Philosophy, however, does not concern itself with these specific determinations of space and time, but only with space and time themselves. Can we then, from a consideration of space and time as related to our faculty of perception, account for the universality and necessity, or what is the same thing, the *a priori* character of mathematical judgments? The determinations of space and time which are the objects of mathematics, cannot, as we have seen, be empirically observed things in themselves, or definite properties of such things, nor can they be mere abstract conceptions, obtained by the grouping of the observed properties common to many concrete objects. "There is therefore only one way in which my perception may anticipate the reality of the object, and yet be *a priori*, viz., when perception contains nothing but the form of sensibility, which precedes all the real impressions through which I am affected by objects."[2] Space and time, therefore, Kant regards as pure forms of perception, by which he means, that they are logically prior to the impressions of the special senses, and that as belonging to the constitution of our perceptive faculty, they are in themselves mere capacities or potentialities, which come into operation only in relation to those impressions. We can now see generally what is the critical solution of the problem, How are mathematical judgments possible? They are possible, Kant answers, because they rest upon determinations of space and time, of which, as belonging to the very nature of our intelligence on its perceptive side, we cannot possibly divest ourselves. To determine space and time as the mathematician does, without bringing into play these forms of perception, would be to perceive without employing the faculty of perception. The universality and necessity of mathematical judgments is therefore quite compatible with the fact that they are synthetical; as specifications of the *forms* of perception they are *a priori*, and as *specifications* of those forms they are synthetical.[1]

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[1] *Prolegomena*, tr., § 10, p. 45.

[2] Ibid., § 9, p. 44.

This general statement of the answer to the question, How is pure mathematics possible? will enable us to understand without much difficulty the various points in the *Æsthetic*. In this division of the *Critique*, Kant, as he tells us, "isolates the sensibility;" in other words, he does not enquire into the constitution or connection of real concrete objects, but contents himself with pointing out the relation of space and time to our intelligence. The discussion, therefore, is so far of a provisional and incomplete character, certain assumptions being made, which are afterwards shown to require more or less of correction. (1) Kant does not in the first instance question the ordinary view, that individual objects as existing in space and time are known as individual by the special senses: he merely asks how, assuming this in the meantime to be true, we are to account for the necessary element in the knowledge of individual things, *i. e.* the knowledge of their quantitative relations. (2) As he does not enquire into the constitution or relation of concrete objects, Kant leaves for future consideration the question as to the applicability of mathematics to those objects. His reason for doing so no doubt is, that the answer cannot properly be given until the categories have been discovered and justified, and the schemata limiting them set forth. (3) In treating of the nature of space and time in their relation to our faculty of knowledge, Kant assumes the ordinary explanation of conception, as the product of abstraction from the individual peculiarities of objects, and goes on to show that space and time are not conceptions in this sense of the term. This provisional assumption he was in fact compelled to make, unless he had begun the *Critique*, as he might have done, with an investigation into the nature of the categories as standing under the supreme unity of self-consciousness. (4) Lastly, Kant does not, in the *Æsthetic*, attempt to explain the process by which the potential forms of space and time are determined to specific spaces and times, but with a glance forward to the completion of this process, he assumes those forms to be already determined. Hence he speaks of space and time as perceptions, although strictly speaking they are not perceptions but merely forms of perception. Here again the order in which he has seen fit to develope his theory compels him to anticipate to some extent the results which he afterwards proves; for, without entering into a discussion of the doctrine of the categories and of the schematism, the process by which space and time are determined could not be explained.

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[1] Up to this point I have, in this chapter, mainly followed the discussion in the *Prolegomena*, and especially §§ 6-12. I may here make the general remark, that my interpretation is based throughout on a comparison of the *Kritik* itself, with the other writings of Kant, and particularly the *Prolegomena*, the *Metaphysische Anfangsgründe der Naturwissenschaft* and the *Logik*.

The *Æsthetic* confines itself, therefore, to the task of showing that space and time are not known to us through the special senses, but are universal forms belonging to the nature of our perceptive faculty; that they are not abstract conceptions but perceptions; and that no other account of their nature is consistent with the peculiar character of mathematical judgments. The discussion naturally breaks up into two parts: the *metaphysical* exposition in which space and time are shown to be *a priori* perceptions, and the *transcendental* exposition, which seeks to show that mathematical judgments are actually based on determinations of space and time, and cannot be accounted for on any other theory of their nature than that given in the metaphysical exposition. The relative incompleteness of the *Æsthetic* as compared with the *Analytic*, arises mainly from the fact that Kant does not yet question the assumption that individual objects, as distinguished from space and time, are known by the special senses without assistance from thought, and that he so far accepts the account of the nature of conception which is given by formal logic. This incompleteness is however partially modified by the inferences in regard to the relation of individual objects to consciousness, which are shown to follow from the new view of space and time which Kant adopts. For, as space and time are now denied to be realities external to consciousness, the concrete objects assumed to be revealed by the special senses can no longer be identified with things in themselves, which by hypothesis are beyond consciousness.

The first point, therefore, to which Kant directs his attention in the *Æsthetic* is to show that space and time are *a priori* forms of perception; in proof of which the following reasons are adduced. (1) Space and time are not, as is usually supposed, derived from an observation of the spatial and temporal relations of individual objects. The external objects I observe are without me, and without or side by side with each other; while all objects, whether external or internal, either co-exist or follow each other. These objects therefore differ not only in having distinct properties, but in occupying different places, and presenting themselves in different moments of time. Admitting, then, that individual objects are apprehended by external or internal sense, I must still presuppose space and time in order to explain my knowledge of the relative positions of external objects, as without me and without or side by side with each other, and to explain my knowledge of the relative position in time of both external and internal objects. Space and time are therefore independent of, and presupposed in, the special perceptions of the senses. (2) The concrete objects which we observe to exist in space and time we can think away, but it is impossible to think away space and time themselves. We must therefore regard space and time as *a priori*.

The next point to which Kant addresses himself is to show, that space and time belong, not, to our thinking faculty, but to our perceptive faculty. In proof of this he brings forward two considerations. (1) A general or abstract conception always refers to a number of individual objects, which agree in certain general relations, while they differ in their specific properties. But there is only one space and one time, not a number of distinct spaces and times. We do indeed commonly speak of various spaces and various times, but these are not separate individuals, but parts in the one single space and the one single time. Again, in a general conception the individual objects standing under it are first known as complete, and the conception is derived from them by abstraction, whereas the parts or constituents of space and time are simply limitations, existing not prior to space and time but in them.[1] From these considerations it is evident that space and time cannot be regarded as conceptions. (2) If we take any abstract conception, we must of course say, that the marks or attributes which distinguish it from other conceptions will be found in all the individual objects we can ever observe to which it is applicable. But the conception itself has a definite number of marks which constitute its individuality as a conception: the individual objects to which it refers are not contained in it, but externally brought under it. Space and time, however, actually have individual parts within themselves, and these parts are not externally brought under space and time as conceptions, but are infinite in number.[2] Space and time, therefore, are evidently not conceptions but perceptions. And as they have already been shown to be *a priori* we may formulate their character in the proposition: Space and time are *a priori* perceptions. They are *a priori*, to summarise Kant's reasoning, because every special perception presupposes them, and because they are not variable but constant; and they are perceptions, inasmuch as they neither *denote* separate individuals, nor *connote* a definite number of attributes belonging to separate individuals, but are themselves determinate individuals.[1]

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[1] It is possible, as Dr. Stirling points out (*Jour. Spec. Phil.*, xiv. 90), that "Bestandtheile" may mean *physical* or *chemical* constituents, in which case we must substitute for "Again, in a general conception . . . in them" the following:—"Nor are these parts constituents that pre-exist, and have to be put together (as bricks to make a house, or oxygen and hydrogen to form water), but they are limitations of space and time as forms." The objection to this is, that physical parts or chemical elements, when combined, produce an *integral* whole, whereas Kant is seeking to show that space and time are *not universal* wholes. He *may*, however, merely mean here to emphasize the *a priori* character of the "parts."

[2] Space and time, as Kant points out in his *Metaphysic of Nature*, are addible and divisible to infinity.

By the application of his peculiar method of seeking to account for the actual knowledge we admittedly possess, Kant has begun that transformation of ordinary conceptions as to the nature of known existence which is the result of every earnest effort to apprehend the relations of thought and reality. His way of presenting his thought, as was natural, consists in exposing on the one hand the vice of ordinary Dualism, and on the other hand in substituting for it his own view, that our intelligence has as perceptive an essential part to play in the formation of the objects in regard to which mathematical judgments are formed. So far he has dealt only with the pure perceptions of mathematics, leaving the question as to the nature of concrete objects, external and internal, for subsequent consideration. Without at present going into the solution of the question, How is the science of nature in the widest sense of that term possible? we can see that the ordinary dualism of thought and things is no longer tenable. If space and time are forms of our perception, it is absurd any longer to speak of known external objects as existing without consciousness. Such a supposition compels us to adopt the self-contradictory view that we have a series of feelings representative of the properties of real things, which are yet not merely successive but also co-existent or permanent in time, and that we have a knowledge of objects which by definition are beyond consciousness altogether and yet are identical with the objects which we perceive. Such a superfluous doubling of external realities must be the result of a false theory of knowledge. Kant's own theory seems to himself to have all the simplicity of a true hypothesis, and to have the merit of explaining adequately the necessity and universality of mathematical judgments. Instead of a double series of objects, an object in space and an object in consciousness, and a double faculty of perception, having before it at once states of consciousness and properties of things, we have merely objects in space in essential relation to our perception of them. Kant's charge against dogmatism, or as he calls it in the present reference, psychological Idealism, is that it confuses externality in space with externality to thought. Real things are certainly external in the sense of being arranged in relation to each other in space, and our perceptions are internal in so far as they are arranged as successive events in time; but objects are not external because they are without intelligence, nor are perceptions internal because they alone are within intelligence. External and internal have meaning only for a being who is conscious of both alike. I call a thing external either because I perceive it to stand apart in space from another thing, or to be distinct from my perceptions as they occur successively in time; and in both cases I am speaking of externality in the sense of position in space, not in the sense of independence on consciousness. I say my perceptions are internal, on the other hand, because they are not made up of parts that stand out of each other, and because two perceptions do not stand apart from each other like two objects in space; in other words, my perceptions are internal because they are not in space but only in time. But although I distinguish in consciousness objects as external from perceptions as internal, the objects and the perceptions alike exist only for me as a conscious being. What Kant proves, then, is that space and time exist only in relation to intelligence, or in other words, that the opposition of external objects to internal perceptions is a logical distinction within consciousness, not a real separation of consciousness from something without it. And this involves the transformation of the ordinary conception of the self as known. According to the psychological idealist, we are immediately conscious by internal observation or introspection of self as a real subject of knowledge. Hence the self is supposed to be real apart from our knowledge of it. But if the self as it exists is independent of our knowledge of it, what relation does it bear to the self as known? It can only be revealed to us in the series of our own mental states, and such states as in time imply the determination of the form of time by the faculty of perception. Thus we have, according to the dogmatist, a self that is given as successive in time and is yet independent of time. Here therefore we get into a difficulty similar to that which we have found to beset the dogmatic theory of our knowledge of external objects. The real self and the self as known fall apart and can by no legitimate process be brought into connection with each other. On Kant's theory, on the other hand, the self is known in the series of its determinations in time, and hence the real and the known self come together in the unity of knowledge. Kant does not indeed deny that there is a noumenal self distinct from the self as known; but he maintains that of such a self nothing whatever can be said, whereas the phenomenal self as within consciousness admits of the fullest knowledge.

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[1] For the reasons given above (pp. 40-42) the metaphysical exposition requires some correction even to express Kant's own final view. Cf. Caird's *Philosophy of Kant*, pp. 264 ff. The transcendental exposition need not be given, as it simply repeats what has already been explained. See especially pp. 39, 40.

In illustration of what has just been said, it may be well to refer here to Kant's refutation of the charge of Idealism. Mr. Balfour[1] maintains that in the *Critique* Kant confuses the existence of external objects in space with the existence of objects external to the mind, and instead of proving the latter, as he supposes he is doing, only proves the former. This c[illegible] is endorsed by Mr. Sidgwick, who adds in su[illegible] of it, that a comparison of the pertinent passages in the *Critique* and *Prolegomena* respectively, shows that Kant must have allowed the two meanings of externality to run into one in his mind, since the same or similar words are used in totally different senses. In the *Prolegomena* he rejects Idealism on the ground that we are conscious of ourselves in relation to noumenal things: in the *Refutation of Idealism* on the ground that we are conscious of ourselves only in relation to phenomenal things. Now "it is more than strange, it is simply incredible, that Kant should in the two replies have used the same cardinal terms in different senses, with a perfect consciousness of their equivocality, and yet without giving a hint of it to the reader."[2]

I do not think that the charge of confusion as preferred against Kant by Mr. Balfour and Mr. Sidgwick can be substantiated. Kant, as I understand him, had only one argument against Idealism. The relative passages in the *Prolegomena* and *Critique* respectively only differ in so far as the former explicitly refers to things in themselves, while the latter allows the reader mentally to supply the reference. Nor do I think that there is such an extraordinary similarity of language, combined with an absolute difference of meaning, as Mr. Sidgwick seems to suppose. Let us first look at the passage in the *Prolegomena*.[1] Kant's object here is to repel the charge of Idealism, which had been brought against him by certain critics who had misunderstood the proper bearing of his theory of space and time on our conception of the external world. He begins by saying that "whatever is given us as object must be given in perception." The first meaning we naturally attach to this saying is, that objects in their determinate properties exist independently of consciousness, and that the individual coming to those objects apprehends them through his senses and receives them into consciousness. Kant, however, whose aim here is to convince those who accept this dualistic view of their mistake, and at the same time to show that his own theory preserves, and alone preserves, the reality of external objects, insinuates into the popular language employed a new meaning. Fully expressed, the remark quoted amounts to this, that whatever we may say of the relation of the external world to consciousness this at least must be admitted, that external or sensible objects are external not to thought but to perception. That Kant here makes use of dualistic language only provisionally is plain from the fact that he immediately adds, that "the senses never and in no manner enable us to know things in themselves, but only their phenomena, which are mere representations of the sensibility." The dualist, in other words, admits that external objects are revealed to us by sense, and therefore he must further admit that those objects as known are not things in themselves, but only things as relative to our consciousness. The properties of things, as Kant has said before, "cannot migrate into our faculty of representation,"[1] and hence, unless perceived objects were formed by the application of space and time to impressions of sense, external things could not be shown to be more than projections of our imagination. "Hence we conclude," says Kant, "that all bodies, together with the space in which they are, must be considered as being merely representations in us, which exist nowhere but in our thoughts." That is to say, the ordinary view that determinate things are independent of our consciousness, turns out to be a mistake, when we refuse to accept any theory of perception but that which is consistent with the real knowledge of determinate 'things. Perceived objects are therefore not things in themselves, independent of our perceptive consciousness of them, but objects constructed out of impressions of sense as brought under the forms of our perception. They are therefore "representations," not in the sense that they are mere ideas of objects existing beyond consciousness, but in the sense that they are objects within consciousness, and yet real because formed by the necessary constitution of our perceptive faculty. Those who are still unable to rid themselves of the preconception that determinate things exist beyond consciousness or independently of our faculty of perception will of course say that this is manifest Idealism. Kant's reply is, that whether we call his view Idealism or no, at least it must be carefully distinguished from what he elsewhere[2] calls "psychological Idealism."

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[1] *Mind*, xii. 498.

[2] *Mind*, xvii. 113. Compare with what is said below Mr. Caird's remarks, *Mind*, xvi. 557 ff, xvii. 115.

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[1] § 13. Remark ii.

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[1] *Prolegomena*, tr., § 9, p. 43.

[2] *Kritik*, p. 29, note.

"Idealism," says Kant, "consists in the assertion that there are none but thinking beings, all other things which we suppose to be observed by perception being nothing but representations in the thinking beings, to which no object external to them really corresponds." The psychological Idealist, in other words, reduces external objects to a mere series of feelings in consciousness. "I say on the contrary," continues Kant, "that things as objects of our senses existing outside us are given, but we know nothing of what they are in themselves, knowing only their phenomena, that is, the representations which they cause in us by affecting our senses." That is to say, Kant differs from the ordinary Idealist in holding that what we call sensible or external objects, *i.e.*, determinate objects, are not merely transient feelings or subjective states, but perceptible objects which, as existing in space, are distinct from any mere series of feelings in time. To this Kant adds, to prevent misunderstanding, that he is not denying the existence of things in themselves, but only the existence of such things as known. The objects we know are things in space, or phenomena, not things without consciousness. The force of Kant's reply does not lie, as Mr. Sidgwick seems to suppose, in the assertion of the existence of noumenal objects, but in the affirmation that the objects we know are real, because they exist for us in consciousness and are yet distinguished from the mere sequence of our representations.[1] I am not an Idealist, Kant argues, because while I do not deny the existence of things in themselves without consciousness, I do not, on the other hand, reduce known objects as existing in space to a mere succession of transient impressions as the Idealist does. If to this interpretation it be objected that Kant speaks of "the representations which objects cause in us by affecting our senses," and therefore must be here contrasting states of consciousness with unknown things in themselves, the answer is, that in reasoning with the Idealist, Kant naturally adapts himself so far to the Idealist's point of view, and that, as the whole course of his reasoning shows, he mentally interprets "representations" to mean *phenomenal objects*, i.e., objects formed by the action of space and time on detached impressions of sense. Accordingly he goes on to say that he "grants by all means that there are bodies without us, *i.e.*, things which, though quite unknown to us as what they are in themselves, we yet know by the representations which their influence on our sensibility procures us, and which we call bodies, a term signifying merely the appearance of the thing which is unknown to us but not therefore less real." Here, again, Kant affirms that he is not an Idealist, because, while granting, or rather affirming, that things in themselves cannot be known as they are, he yet holds that there are bodies in space which are known as distinct from the mere series of representations belonging to the phenomenal self. No doubt the phrase about "things in themselves which we yet know by the representations which their influence on our sensibility procures us," might be used by one who accepts the ordinary view that objects as determinate exist beyond consciousness and are only known through the perceptions which they excite in an individual mind separate and distinct from them; but this only shows that, while using common language, Kant infused into it the new meaning which it acquires when viewed in the light of his own theory. "Representations" does not here mean, as it would in the mouth of the psychological Idealist, *ideas* in an individual mind which is cut off from all direct contact with determinate things, but *objects* determined by the forms of space and time in relation to individual sensations. The contrast of "representations," as informed sensations or phenomena to "things quite unknown to us," is perfectly clear and unmistakable to one who reads Kant's words in connection with his general theory and with the immediate context. The refutation of the charge of Idealism is therefore made in the *Prolegomena* to turn upon the distinction between a mere succession of ideas, which constitutes the whole material from which the psychological Idealist has to explain the knowledge of real existences, and known objects existing in space and contrasted with the series of our perceptions as only in time. The reference to things in themselves is not essential to the proof, and is merely introduced to explain the difference between Kant's view of known or phenomenal objects and the ordinary conception of objects as constituted apart from any influence of our perceptive faculty. The Idealism which is sought to be refuted is that which maintains that we are immediately conscious only of the self as having a series of mental states; and Kant distinguishes his own theory from such Idealism by showing that for the absolute distinction of determinate ideas in consciousness, and determinate things as existing beyond consciousness, we must substitute the relative or logical distinction of determinate ideas in time and determinate things in space and time. Let us now look at the argument as stated in the *Critique*.[1]

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[1] The admission that there are, in any ordinary sense, things in themselves is provisional. See below, Chap. x.

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[1] *Kritik*, p. 198.

The proof is of the nature of an *argumentum ad hominem*. Kant seeks to convict the Idealist out of his own mouth by showing that the consciousness of self, as having a series of states, is bound up with the correlative consciousness of the not-self as a congeries of objects in space; and this he does by endeavouring to show that the consciousness of our feelings as *before*, *now*, and *after* is possible only on the presupposition of the consciousness of external things as permanent. The thesis to be established is that the "mere consciousness in experience of my own determinate existence proves the existence of determinate objects in space outside of me." The proof begins with a statement of what is granted by the Idealist and everybody else, viz., that I am conscious of my own determinate existence as in time; in other words, that I am conscious of having a series of mental states. Then follows the proof itself, which contains the following steps:—(1) The consciousness of time as determinate can only be accounted for on the supposition that something is known as permanent; (2) This permanent cannot be found in my mental states *per se*, i.e., the permanent is not the mere idea of the permanent, and hence it must be bound up with the consciousness of external things; (3) Consequently the consciousness of my mental states as internal necessarily implies the consciousness of things in space as external. Let us take these steps in order. (1) "All determination of time presupposes something permanent in perception." Kant gives no proof of this assertion, mainly, no doubt, because he had proved it at length in the first analogy of experience.[1] It is enough to say here that if we eliminate the permanent altogether, we cannot conceive how there should be a consciousness of time as before, now and after, since time is the mere form of perception of which we cannot become conscious except in relation to the particulars of sense. Now (2) "this permanent cannot be anything in me, because the only way in which my existence in time can be determined is through this permanent. Hence the perception of this permanent is possible only through a thing outside me (*Ding ausser mir*) and not through a mere idea (*Vorstellung*) of a thing outside me." These two sentences really contain the whole of Kant's argument against Idealism, and to fail in understanding them is to miss the point of the whole refutation. It must be observed that a strong contrast is drawn between (*a*) a "permanent in me," which is equivalent to the "idea of a thing outside me," and (*b*) the permanent as a "thing outside me." The gist of the argument is, that a "permanent in me" is a "mere idea" or subjective state, and that this is the only permanent which the psychological Idealist is entitled to speak of. Now, argues Kant, the mere idea of the permanent will not account even for the consciousness of time as determinate. This is further explained in the remarks appended to the *Refutation*, where it is pointed out that the mere "I" of consciousness must not be identified with the "I" as determinate, because the self as determinate is in time, and therefore the object of inner perception; and again that the "I" is destitute of even the least determinateness, and hence cannot supply the permanent required as "correlate of the determination of time." In other words, the pure "I" is not a permanent in time, and therefore not a permanent in contrast to which we can become conscious of the self as in time, or of time as determinate. The permanent, therefore, which we require is a permanent in time. But there is no permanent in time except the permanent in space, since mere ideas have no permanence in themselves, and the pure "I," as the mere abstraction of relation to consciousness, is not in time at all. If there were no permanent in space, but only the *idea* of the permanent in space, there could be no consciousness of time as determinate, since an idea is in itself a mere transient state. The permanent therefore is not in me, or is not a mere idea of a thing outside of me: it *is* a thing outside of me, *i. e.* in space. The Idealist is therefore compelled to admit that the permanent is not outside of consciousness, but only outside of a mere series of mental states; in other words, external phenomena are known as directly as internal phenomena. Thus the opposition of mere ideas to things without consciousness, is transformed by Kant into the relative distinction of real internal events and real external things, both alike being, in Kantian language, phenomena, and not the one a phenomenon and the other a thing in itself, as the Cartesian idealist might say; or the internal events real and external things nonentities, as the Berkeleyan idealist might say. Mr. Sidgwick is therefore in error when he supposes[1] that the "thing outside of me (*Ding ausser mir*)" of the *Critique* is identical with "the unknown but not the less real object (*unbekannter aber nichts desto weniger wirklicher Gegenstand*)" of the *Prolegomena*, and is contrasted with the "mere idea of a thing outside of me (*blosse Vorstellung eines Dinges ausser mir*)" as a thing external to consciousness with a state of consciousness. The "unknown but not the less real object" of the *Prolegomena* is distinguished from the "thing outside of me" of the *Refutation* as thing in itself from phenomenon, and, as has been shown above, the "thing outside of me" is contrasted, not as a thing external to consciousness with an idea in consciousness, but as a thing *in space* with that *mere idea* of a thing in space, which the Idealist according to Kant is alone entitled to speak of. Mr. Sidgwick has misunderstood Kant's argument, from not bearing in mind that it is not direct but indirect. The interpretation I have given is borne out by the conclusion of the proof, which runs thus: "Consequently the determination of my existence in time is possible only through the existence of real things which I perceive as outside of me. Now consciousness in time is necessarily bound up with the consciousness of the possibility of the determination of consciousness in time, and therefore with the existence of things outside of me, which are the condition of the determination of time; *i.e.* the consciousness of my own existence is at the same time an immediate consciousness of the existence of other things outside of me." In other words, my own existence in time (my phenomenal existence) is possible only through the existence of things in space (their phenomenal existence); for the consciousness of myself as in time can only be explained, as has been shown, on a theory which accounts for the consciousness of determinate time, and this again presupposes the consciousness of things as in space. The *Refutation of Idealism* therefore differs from the passage in the *Prolegomena* simply in omitting any reference to things in themselves, and in containing a complete proof of the correlation of external and internal phenomena instead of a mere assertion of their correlativity. That in the *Critique* Kant does not explicitly refer to things in themselves, is easily accounted for when we consider, that in the remarks added to the *Æsthetic,* as well as in several passages both before and after the *Refutation,* the distinction between thing in itself and phenomenon is clearly drawn, and hence might be assumed to be familiar to the reader.

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[1] For a statement of this proof, see Chap. vi.

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[1] *Mind*, xv. 410.

CHAPTER III.

THE A PRIORI CONDITIONS OF KNOWLEDGE IN GENERAL.—THE CATEGORIES AND SCHEMATA.

THE first question of critical philosophy, viz., How is mathematical knowledge possible? has been answered by showing that space and time, on which mathematics rests, are pure forms of perception. One inference from this is that external objects are not outside of consciousness, but are products of the perceptive forms as applied to our impressions of sense. As the external objects we know are thus, contrary to our common-sense view of the world, not things in themselves but phenomena, we may expect that the second question of critical philosophy, viz., How is a science of nature possible? will be answered in a similar way. And indeed it is easy to show that if by nature we understand things in themselves, there can be no *science* of nature. A scientific knowledge of things that exist in complete independence of our intelligence can neither be accounted for on the supposition that things are known *a priori*, nor on the supposition that they are known *a posteriori*. (1) If things exist independently of thought, they must have an unchangeable nature of their own, irrespective altogether of their relation to our faculties of knowledge. It is therefore impossible to pass from thought to things. By hypothesis our conceptions are completely separated from real things, and however perfectly we may analyse them, and express what is implicit in them in the form of judgments, we are at the end of our labour no nearer to real things than at the start. Analytical judgments, valuable as they are in giving clearness to our conceptions, do not, and cannot, carry us over to things assumed to be independent of all relation to thought; only synthetical judgments, taking us beyond conceptions to realities, are of any avail, and such judgments cannot be shown to be *a priori,* so long as we assume the independent existence of real things. The difficulty here is, therefore, to explain how there can be *a priori* judgments that are not merely analytical. (2) Equally impossible is it to account for a science of things in themselves by observation. Real things must evidently have a necessary nature of their own, or they would not be real. But if we begin by saying that they are complete in themselves apart from any relation to our intelligence, we can only obtain knowledge of them by coming directly into their presence. We are thus dependent for our knowledge of things upon the extent to which our observation has gone, so that we can say nothing about objects except what our special observations enable us to say. But a science of nature must contain laws that are necessary and universal, and hence it cannot rest on mere observation. In other words, by observation we cannot know things as they really are. As before we saw that assuming things to be completely independent of thought, our judgments might possibly be *a priori* but could not be synthetical, so now we find that admitting them to be synthetical they cannot possibly be *a priori.*

And yet there must be some way of showing that we are capable of making judgments that are not merely analyses of assumed conceptions, but hold of Nature herself. For that there is a science of Physics resting upon certain universal and necessary principles is universally admitted. Physics is no doubt based upon observation, in so far as its concrete content is concerned, but it also presupposes certain elements that no mere observation can supply. Not only does the physical investigator make use of the necessary truths of mathematics, but he also assumes the truth of certain discursive principles, resting on pure conceptions. Of course Physics is not based entirely upon pure perceptions and pure conceptions; for such conceptions as *motion*, *inertia*, and *impenetrability* have an element due to sensible perception and therefore cannot be called pure. Besides, Physics is not the science of Nature in the widest sense, for it deals only with facts of the external world, to the exclusion of internal or psychological facts, while by Nature we properly mean to embrace both classes of facts. Notwithstanding these limitations, however, Physics does contain, or rather rest upon, certain necessary and universal principles, such as these: that *Substance is permanent*, and that *Every event depends on a cause.* Confining our attention, then, to these *a priori* principles, the truth of which alone makes a science of Physics possible, we get the conception of a pure science of Nature, and the problem we have to solve is to explain how such a science, containing a body of necessary and universal principles, can be accounted for. Nature therefore must mean the sum of knowable objects, and the Science of Nature the necessary principles making them knowable. We may, in fact, say that our problem is to justify, if that be possible, those necessary and universal propositions which the scientific man assumes to be true, and which, without such justification, can only be a matter of faith. Now the objects to which a science of Nature applies cannot be things the nature of which is in no way dependent on our thought, for this assumption, as we saw above, either prevents us from accounting for our knowledge of reality or from accounting for the reality of our knowledge. But while of things in themselves we can have no experience, it does not follow that everything which comes within our experience is real. Because only phenomena are capable of being known, it does not follow that all that appears to be true really is true. There are real phenomena, and phenomena that are mere illusions, and again phenomena that are true only for the sensitive individual. These distinctions, however, do not in any way affect the question as to the conditions of real knowledge. Whether a judgment is true only when limited to the individual as sensitive, or applies to objects as external; or whether again a judgment about a matter of fact is only probable or certain; these are questions for the scientific specialist to determine: our concern is solely to show the possibility of apodictic judgments in regard to nature from an examination of the conditions of there being any real knowledge. It will, however, aid us in solving our special problem, if we first consider the difference between those judgments which the scientific man regards as existing laws of nature, and those which have not reached this degree of scientific certainty. The former we may call Judgments of Experience, the latter Judgments of Perception. Real experience always consists in judgments as to objects that are true not merely in reference to the sensitive nature of a particular individual, but in relation to real things. We never in any of our judgments which deal with observed objects, come into contact with things in themselves. This is an utter impossibility, because, as we have seen, things in themselves cannot possibly come within the range of our observation. Were there nothing else, the fact that Space and Time are simply forms of our perception, not real things or real qualities of things, must prevent us from ever observing anything but phenomena. Even the simplest perception is therefore not the perception of a thing in itself, but only of a phenomenon. But this is in no way inconsistent with the fact that our first judgments as to phenomena are only provisional. Now these judgments we may call Judgments of Perception, not because they deal with phenomena, while judgments of experience deal with things in themselves—for both alike are limited to phenomena—but because the former class of judgments do not go beyond the observation of phenomena as they first present themselves to us in apparent independence of each other, while the second and higher class of judgments imply a more thorough comparison and connexion of phenomena, and therefore the arrangement of them under the categories of relation. In the one case we take things as they first present themselves to us in their apparent disconnexion; in the other we go beyond this first view of things, and find out how they are related to each other. All our common-sense observations of things are, in the first instance, judgments of perception, which can attain to the rank of judgments of experience only by scientific investigation. Every instance of a judgment about a mere matter of fact is a judgment of perception; every discovery of a law regulating matters of fact is a judgment of experience. "All our judgments," as Kant says, "are at first mere perceptive judgments." In other words, when we look at the gradual way in which our knowledge of phenomena of nature grows up, we see that, *in the order of time*, judgments of perception go before judgments of experience. Now a judgment of experience is a judgment which we regard as true, not merely of this or that individual, but of *all* individuals; we regard it as universally and necessarily valid. Thus judgments of experience, *just because* they are regarded as universally and necessarily true, we conceive to be objective. Judgments of perception, of course, refer to *objects*, but they are not *objective*, because they are not proved to be necessarily and universally true for all human intelligences under all circumstances.

Let us take one or two illustrations. When I say This room is warm, I do not make a judgment that is true for every one, but only one that is true for myself as a particular sensitive individual, and only for me so long as my sensitive organism is in a particular state. Here, then, we have a mere judgment of perception. This, indeed, is not the best instance that could be given, for it is evident that such a judgment could never become a judgment of experience, because heat does not exist in external objects apart from their relation to our sensitive organization. It may, however, serve to illustrate what a judgment of experience *is not*. Here is a much better instance. When I say "The air is elastic," I do not, in the first instance, mean more than that a certain phenomenon recognized by relation to my senses is associated in my observation with a certain property also relative to my senses. But when by scientific observation I find that "elasticity" is bound up with the very nature of air, my judgment of perception passes into a judgment of experience. Or again, I observe a stone to grow warm, and I observe that this takes place when the sun shines upon it. But it may be that these two phenomena are not really *connected* with each other but only happen to follow each other in my observation. Until, therefore, I have proved by scientific observation that the heat in the stone is communicated by the sun, I am only entitled to say: *So far as I can see*, the sun is the cause of the stone growing warm; I cannot say, The sun *is* the cause of the stone growing warm. In the one case, I make a judgment of perception; in the other, a judgment of experience. Now it will be seen that in passing from a judgment of perception to a judgment of experience, I bring into play a connecting conception—in the cases mentioned, the conception of cause. The question, therefore, for transcendental philosophy is to show of what nature such conceptions must be, if we are to account for necessary and universal judgments. There can be no doubt that science does suppose itself to be entitled to make such judgments, and that in doing so, it brings into operation certain conceptions. The question, therefore, for us is to show, if we can, how there can be conceptions entitling us to make judgments about real objects, *i.e.*, to form *a priori* synthetical judgments of experience.[1]

We have seen, then, that by Nature is to be understood the sum of knowable objects as determined by certain universal and necessary judgments. Nature, in so far as it is external nature, means not determinate things existing apart from our intelligence, but those real objects connected by apodictic judgments with which physical science has to do. Kant, in other words, accepts the judgments of science as distinguished from the non-scientific judgments of ordinary consciousness, and, pointing out, in accordance with the conclusions established in the *Æsthetic*, that all known objects, and therefore the objects of science, are phenomena, he translates the question, "How is a pure science of Nature possible?" into the form, "How are judgments of experience possible?" His problem, therefore, is not to establish the *fact* that there are judgments of experience—judgments which, as necessarily and universally true, are "objective," in his sense of the term—but to explain, if possible, *how* we can have such judgments. This is the same question in a more specific form than that with which he started, viz., How are synthetical judgments *a priori* possible? All these ways of putting his problem he has: How is real knowledge possible? How are synthetic judgments *a priori* possible? How is a science of Nature possible? How are judgments of experience possible? and even, How are objects possible? Put the problem as we please, it always comes back to this, How can we justify the conviction held by every one, and emphasized by science, that our knowledge is not a mere combination of coherent fictions, but a knowledge of actual existences?

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[1] So far the *Prolegomena*, §§ 14-20, is in this chapter followed. With the above account of the distinction between judgments of perception and judgments of experience compare Caird's *Philosophy of Kant*, pp. 354 ff.

Now the especial difficulty in answering this question arises from the apparent impossibility of showing that judgments which rest upon conceptions can yet apply to real things. But, taking the hint from what we have already discovered as to the basis of mathematics, we may expect to find the solution in explaining things from the nature of thought, not thought from the nature of things. In any case, our problem is to account for real or objective judgments, and hence an analysis of our faculty of judgment ought to give us the clue to the *a priori* conceptions of thought, if there are such, as we cannot doubt there are. I need hardly say that Kant, accepting so far the analysis of ordinary logic, endeavours to reason back from the distinctions he thus obtains to the pure conceptions or categories which are to serve as the basis of objective judgments. This way of discovering the categories is evidently in harmony with Kant's general method of seeking for a hypothesis which shall adequately explain the facts of experience. Just as the judgments of mathematics and physics are made the starting point from which philosophy has to work back to the ultimate conditions of knowledge, so the common analysis of judgments, which is assumed to be correct within its own sphere, is used as the stepping-stone to the pure conceptions which express the ultimate nature of thought. That we do make real judgments no one doubts; and that there are certain formal rules or laws to which thought must conform, formal logic has shown; and hence we may state the special problem now to be solved in this way, What are the ultimate forms of unity belonging to the constitution of our intelligence, in so far as it is not perceptive but thinking? In the *Æsthetic*, the necessary element implied in our knowledge of individual things considered as simply existing in space and time was determined; now we wish to know what is the necessary element which introduces unity into all our knowledge. And this element must of course be supplied by thought, not by sense. Now as all acts of thought may be reduced to judgment, an analysis of the various forms of judgment must enable us to find out the pure conceptions which bring unity into real knowledge. This analysis we find ready to our hands in formal logic. Concentrating itself upon the faculty of thought, and leaving to metaphysic the determination of the supreme conditions of knowledge, formal logic asks what are the laws by which the understanding is guided, consciously or unconsciously, in the actual process of knowing. Now judgment is the act of thought by which various representations are reduced to unity by being brought under a common representation. And unity of representation may be brought about either in the way of (1) quantity, (2) quality, (3) relation, or (4) modality. (1) Every conception is capable of being made the predicate in a judgment, and as a universal, it is a possible predicate of various judgments. And as in judging we may either bring the whole of the individuals denoted by the subject, or only some of them, or again a single concrete individual, under the conception taken as predicate, judgments in respect of quantity are either universal, or particular, or individual. It is true that formal logic practically treats the individual judgment as universal, and therefore divides judgments into those whose quantity is universal and those whose quantity is particular; but this elimination of the individual judgment, which is perfectly justifiable when we abstract from all the content of knowledge and deal only with the relation of whole and part, is not admissible when we use the functions of judgment as a clue to all the modes of unity belonging to the constitution of thought. In real knowledge the individual cannot be identified with the universal, and hence there must belong to thought a form corresponding to the individual. In the universal judgment, then, the sphere of one conception is completely enclosed by the sphere of another conception; in the particular, a part of the one is within the sphere of the other; and in the individual, a conception which, as indivisible, has no sphere of its own, is enclosed within the sphere of another conception, (2) As to quality, judgments are affirmative, negative, or infinite. Here again formal logic rejects, and rightly rejects, the infinite judgment, because there is nothing gained by distinguishing the infinite from the affirmative judgment when we are not determining the conditions of real knowledge. In the affirmative judgment, the subject is thought of as *within* the sphere of the predicate; in the negative as *without* the sphere of the predicate; while in the infinite judgment, the subject is placed *within* the sphere of one conception and at the same time is *excluded from* the sphere of another conception. The distinction of affirmative and negative judgments is familiar to every one; but a word may be said about the negative judgment. In the proposition, "The soul is not mortal," the subject "soul" is placed within the class "not mortal," and is therefore so far affirmative; but on the other hand, it is excluded from the class "mortal," and is therefore in a sense negative. The infinite judgment thus depends upon a function of thought distinct from those functions manifested in the affirmative and negative judgments; and hence it must be taken note of in our attempt to discover all the pure conceptions which the functions of thought in judgment presuppose. (3) Besides quantity and quality, judgments are distinguished as to relation, *i.e.*, as categorical, hypothetical and disjunctive. In the first, we have the relation of two conceptions; in the second, of two judgments, and in the third of several judgments, separate from each other and yet combined into a whole. (4) Modality is a distinction of judgments that has reference merely to the relation between our knowledge and reality. Here judgments are classified as problematic, assertative and apodictic, according as they affirm possibility, actuality, or necessity of the objects of thought.[1]

Starting, then, from the forms of judgment as systematized by formal logic, we are enabled to discover the pure conceptions which they presuppose. Whatever differences there may be in the objects judged of, thought must conform to certain general rules, on pain of falling into contradiction with itself, and destroying even the possibility of true judgments. We cannot, indeed, from a consideration of the forms of judgment, tell whether a given conception represents a real or a fictitious object, but we can tell what relations it bears to another conception also given to us. The conception of "body," *e.g.*, as the product of comparison, reflection and abstraction, we may bring into relation with the conception "metal," and so determine the judgment thus formed in respect of quantity and quality. Now the fact that in such analytical judgments we determine abstract conceptions to certain relations, shows us that our understanding has these functions as belonging to its constitution or inner nature. The "matter" of conceptions and judgments must no doubt be given to thought, but the rules observed by thought in combining conceptions into judgments must belong to thought itself. It is therefore plain that in these functions of judgment we have the key to the explanation of the conditions of knowledge, so far as knowledge is related to thought as distinguished from sense. All real knowledge must at the very least conform to the laws binding upon thought as displayed in judgments. Hence, just as formal logic, by an analysis of the judgments we make in our ordinary and scientific knowledge, is able to discover the functions by which unity is produced in our conceptions; so, by reasoning back from these functions of judgment, we may discover all the ultimate conceptions which are essential to the constitution of real knowledge; we may, in other words, reach to the pure conceptions which such knowledge presupposes. While the combination of conceptions in the analytical judgment is quite a different thing from the combination of the manifold of sense by which real objects are at first made knowable, it is not less true that the functions of judgment manifested in each of these modes of combination, do not vary, but are necessarily the same in both. "The same function," says Kant, "which gives unity to the various representations *in a judgment*, also gives unity to the mere synthesis of various representations *in a perception*; and this unity, expressed generally, is a pure conception of thought. Thought at once gives analytical unity to conceptions, and synthetical unity to the manifold of perception in general; and indeed the logical form of judgment presupposes and rests upon the very same acts of thought as those by which a transcendental content is given to our various representations. Hence it is that the pure conceptions of thought, as they are appropriately called, apply *a priori* to objects."[1] That is to say, the act by which, in an analytical judgment, we subsume one conception under another of higher generality, implies the exercise of a function of unity belonging to the nature of thought itself; and having, by analysis of our actual judgments, discovered this function to belong to our understanding, we may be sure that in the actual process of knowing real objects the same function has been exercised. Now, as the content of our judgments must have been obtained by synthesis, and not by analysis—since analysis does not supply or add to our knowledge, but merely brings into clearness what we already know—we at once see that there are certain pure conceptions belonging to the form of thought, which are the necessary conditions of unity in our knowledge of real objects and of their connexions. The functions of unity in judgments, as systematized in formal logic, therefore point unerringly to the pure conceptions or categories by which the unity of the known world is produced. The table of categories, as we may be sure, is complete, because it is obtained from an analysis of all the functions of thought as exhibited in judgments. It was because Aristotle did not deduce his categories from the nature of thought itself, but simply gathered together those conceptions which struck him, and which seemed to him to be primary, that his list is at once redundant and defective. Contenting himself with simply gathering together those conceptions which he happened to hit upon, and which seemed to be primary, it is not surprising that he should omit some categories altogether, and include others that are not primary but derivative (action, passion), as well as an empirical conception (motion), and mere modes of time (when, where, position). Let us see, then, what are the pure conceptions or categories, as implied in the various functions of judgment. These will, of course, like judgments themselves, come under the heads of quantity, quality, relation, and modality.

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[1] *Prolegomena*, § 21. *Kritik*, § 9. *Logik*, §§ 20-25.

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[1] *Kritik*, § 10, p. 99.

(1) Judgments, as we said, are in *quantity* universal, particular, or individual. Now the corresponding cate-

gories are pure forms of thought, by the application of which to the mere multiplicity of sense, concrete individuals and specific connections of individuals, are constituted. By reducing to the unity of quantity the manifold of sense, objects are constituted as unities, pluralities, or totalities. The categories of quantity therefore are unity, plurality, totality. (2) The *quality* of judgments is affirmative, negative, or infinite. The categories presupposed, as conditions of unity in real existence in so far as it is knowable, must account for the affirmation, the denial or the partial affirmation and partial denial of objects; and hence we have as categories, reality (existence to be affirmed), negation (existence to be denied), and limitation (existence partly to be affirmed, partly denied). (3) As to *relation*, judgments are categorical, hypothetical, and disjunctive. Now a categorical proposition affirms the relation of a given predicate to a given subject; and if we regard this relation as real, and not simply logical, we have the relation of a real subject to a real predicate, *i.e.*, we have the categority of substance and accident. In the hypothetical judgment, we have the logical relation of antecedent and consequent; and this, when viewed as a relation between real objects or events, is the category of cause and effect. Again, in a disjunctive judgment, we have the logical distinction of the different parts of a conception and at the same time their combination; and this relation of parts and whole, when taken as applying to real existence, yields the category of reciprocity. (4) As to *modality*, judgments are problematic, assertative, or apodictic. And a problematic judgment as to real objects presupposes the category, possibility —impossibility; an assertion as to reality may be either affirmative or negative, and hence the category, actuality—non-actuality; and, lastly, an apodictic judgment, applicable to the real world, either asserts that something must be, or denies that it is necessary, and accordingly, the category is necessity—contingency.[1]

Assuming, then, that these are the categories, and all the categories, the next point is to justify them, *i.e.* to show how they serve to unify knowledge. This justification or "deduction" of the categories constitutes the very heart of Kant's theory of knowledge.

The misconception that determinate objects exist as they are known independently of any relation to our faculty of knowing, and are simply taken up into our minds from without, has been partly dissipated in the *Æsthetic*. It was there shown that known objects are not independent of our perceptive faculty, but are the product of the pure forms of space and time as applied to impressions of sense. Now this transforms our ordinary view of things. When it is seen that known objects are not independent of our perceptive faculty, the dualism of consciousness and nature is replaced by the logical distinction of internal and external perceptions. For individual objects we substitute individual or separate impressions of sense, only existing for us as perceptive beings. Similarly, for space and time as realities beyond consciousness we substitute space and time as mere potential forms belonging to the constitution of our perceptive faculty. Thus perception has two elements: impressions of sense as the "matter" of perception, and space and time as the "forms" of perception. Determinate things independent of consciousness, and apprehended as they are in their own nature, transform themselves under criticism into a "matter" and a "form" that have a meaning only for us as conscious and perceptive. For this reason Kant says that perceived objects become for the critical philosopher "simply the way in which the subject is affected." A still further transformation takes place, when we examine critically into the relation of our *thinking* faculty to objects. For all thinking or judging is a purely spontaneous act of combination (*conjunctio*), as distinguished from perception, which is universally held to be receptive. On the ordinary view, thought or understanding combines the real things which the senses reveal to us, or the real lines, figures, &c., dealt with by mathematics, and this act of combination is judgment. Even from the ordinary point of view, therefore, thinking is a process of combining multiplicity so as to produce unity. The critical philosophy likewise holds that thinking or judging consists in combining multiplicity, but of course the multiplicity combined assumes a different aspect. We cannot say that thought combines individual objects having a nature independent of our knowledge, for the main result of our critical investigation in the *Æsthetic* is to show that the objects which we know are not independent of perception, but are resolvable into a "matter" of sense and two potential "forms" of sense, and that the whole perceived object exists only in relation to consciousness. It may perhaps be thought that the forms of sense contain in themselves a faculty of combination, and that in coalescing with the impressions of sense they yield objects known as *arranged in* space and time. But this is to attribute to a mere receptive faculty a power of combination it cannot possibly possess. Moreover, the forms of perception are in themselves mere potentialities; they must not be confounded even with mathematical figures—which are not *forms* of perception but

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[1] *Kritik*, § 10.

determinations of those forms—and hence they are not of themselves capable of arranging sensations in space and time. The only combining faculty is the understanding, and the "manifold" which is to be combined is either impressions of sense or determinations of space and time. Into this manifold or multiplicity—this mere difference—the understanding by its combining activity introduces unity. Now this leads to a still further transformation of the common-sense view of things than that effected in the *Æsthetic.* If known objects, in so far as their perceptive element is concerned, are resolvable into an uncombined manifold, thought must have been at work combining that manifold before objects can be known as objects at all. Thus, whether we take an individual object as a sum of properties, or two or more individual objects as connected in experience, we must, to account for our knowledge, suppose thought to have combined the mere manifold of perception into unity. "Nothing," as Kant says, "is thought as combined in any object which the understanding has not itself previously combined." Thus the ordinary theory of perception which supposes individual things to be given independently of thought, is an inversion of the truth, and equally the ordinary view of judgment as a mere analysis of perceptions or conceptions. Analysis presupposes synthesis, and hence the combining activity of thought is exercised even in the unconscious combinations which take place in the growth of our knowledge, and not merely, as common logic supposes, in the conscious or reflective combination of perceptions under abstract conceptions. Now this combining of multiplicity by thought must imply that thought is in its own nature essentially a *unity.* From the uncritical point of view, the combinations of thought are simply the external comparing of two or more individual things supposed to be known in perception as individuals prior to the comparison, or the arbitrary arranging of one conception under another of greater extension. The product of such external combination can only be contingent. I combine objects in a certain way, but I might combine them in any other way I pleased. The only unity therefore is one which our individual reflection must be supposed arbitrarily to impose. We never can show that the unity which we *suppose* to exist is a real or necessary unity. Our judgments cannot be proved to be objective. The only way therefore in which the unity of known objects, either taken separately or in their connection, can be established, is by regarding thought as in its very nature a unity, and as therefore capable of producing unity in known existence. That this must be so is evident from what has already been said. For when known objects, in so far as they are relative to perception, are reduced to a mere multiplicity, the only other source from which unity can come is thought or understanding. The unity, then, must belong to the very nature of thought; and, as all knowledge, even the simplest and least reflective, has been shown to imply the combining activity of thought, it follows that thought possesses the faculty of *producing* unity, because it *is itself* essentially a unity. It should be observed that we are not here speaking of the *category* of unity. That category is a special application of the unity of thought in relation to objects, not the unity of thought *itself*. Can we then show *how* thought is a unity? The answer to this question will give us the principle on which the deduction of the categories must proceed.[1]

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[1] *Kritik*, § 15.

In our ordinary or uncritical consciousness, we do not reflect that the unity of thought must be the necessary condition of our knowledge of real things. We suppose on the contrary that things as they are in themselves are immediately revealed to our senses. We have an immediate consciousness, as we suppose, of individual things, irrespective altogether of any unity introduced by our consciousness into things. "The empirical consciousness, which accompanies different ideas, is in itself scattered and without relation to the identity of the subject." In other words, we do not in our ordinary knowledge know *what* is the principle which makes a connected knowledge of things possible, but simply *have* a consciousness of now one thing and then another. We suppose ourselves to be immediately apprehending things as independent of consciousness, and hence it never occurs to us that there must be a unity of thought in our knowledge of things. We have seen however that we must seek for the unity of knowledge in the nature of thought as combining the detached multiplicity of perception. Now it may easily be shown that such a unity is presupposed in ordinary consciousness. My knowledge must be so connected in all its parts as to form a rounded whole or it would not be knowledge at all. If it were not connected by a central unity, I should have no connected knowledge: an idea that I cannot bring into unity with other ideas is an absurdity; or at least, granting its possibility, it is nothing at all for knowledge. I must therefore, consciously or unconsciously, connect all my ideas in a unity. On any other supposition, I should have "a self as many-coloured and various as the ideas I have." Each of my ideas must therefore be connected with every other. Hence there must be a single self as the condition of there being for me a faculty of thinking, a faculty of reducing multiplicity to unity. We can see this by taking any idea we please. Suppose, *e.g.*, I have the idea "red." Now I can be conscious of "red" only in contrast to some other idea, and hence I must in being conscious of "red," relate it to other ideas previously experienced. Thus the fact that I have a connected consciousness of things necessarily presupposes that there is a supreme unity connecting them. This unity is manifestly the unity of the self as the principle of connection. The conception of the self as the condition of all synthesis is the supreme principle of all thinking; it is in fact, as we may say, thought itself. It must be observed, however, that it is only as the condition of the connection of the manifold of perception that the "*I*" is *synthetical:* I = I is a merely analytical or identical proposition; "I" as the supreme unity making the unity of conscious experience possible is alone synthetical. This shows that *our thought* cannot operate of itself, but only in relation to the manifold of sense: in other words, as supplying only an *element* of knowledge it of itself gives no knowledge. Thought cannot perceive any more than sense can think, and hence known objects would be nothing were the element contributed by either faculty absent.[1]

We have seen above that thinking is judging, and that, reasoning back from the various forms of judgment as classified by formal logic, we get the fundamental forms or functions of unity, which we call the categories. And as the manifold of perception can only be reduced to unity by reference to the synthetical unity of self-consciousness as the supreme condition of thought, it of course follows that the manifold of perception which is to be reduced to unity or objectivity must stand under the categories. It must be observed, however, that the categories are in themselves only the formal conditions of the combination of the manifold of perception, and do not originate the manifold which they are capable of combining. A perceptive understanding may not be impossible, but such is not the nature of human intelligence. A manifold must therefore be supplied to the categories before they can possibly operate, and this manifold, as we have seen, belongs to us as receptive or sensuous beings. Now a manifold of perception may be either pure or material: *i. e.*, it may be either a determination of space and time as in mathematics, or it may imply in addition those sensuous impressions which give to us the concrete element of real objects. The categories can certainly operate on pure perceptions, but in doing so they do not give us any knowledge of Nature as the sum of real objects. Mathematics deals only with the determinations of the forms of perception and therefore of perceivable objects, not with real objects themselves: its judgments are universally and necessarily true, supposing real objects to exist, but not otherwise. Besides the categories and the forms of perception, the possibility of objective judgments or judgments of experience therefore implies that a manifold of sensuous impressions is given to the categories to operate upon. And this shows not only how a science of nature is possible, but what are the limits to our possible knowledge. No doubt thought could combine any manifold supplied to it; but this mere possibility is useless for us, since the only manifold we can have is a manifold of sense. The limit of our knowledge is therefore fixed by the compulsion we are under of obtaining a manifold of sense before we can give determination to our conceptions. A non-sensuous object is thinkable only as that which is not a real object of knowledge: it can be defined only by negative predicates, and therefore cannot be known to be real.[1]

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[1] *Kritik*, § 16.

We have now so far determined the elements which real knowledge implies, and marked out its boundaries. There must be a manifold of sense, referred to the "I" as the supreme principle, and standing under the forms of space and time, which again stand under the categories as functions of unity. But while all these elements are necessarily implied in our knowledge of real objects, there is still a difficulty in seeing what *binds* the different elements together. For it must be remembered that the manifold of sense when taken in its abstraction is merely a number of blind or isolated points, having no principle of unity in them. It must further be remembered that the forms of space and time are in themselves mere potentialities having neither unity nor determinateness. In like manner the categories are forms of unity, but they also are in themselves mere potentialities, which can be called unities only on supposition that they can be called into exercise. And lastly, the "I" is in itself a pure, dead identity; it is the condition which must be presupposed before we can possibly explain how unity comes into knowledge, but it is powerless to account of itself for actual knowledge. The manifold of sense, the forms of space and time, and the categories, are in short abstract elements of knowledge; but in no one of them, nor in the whole of them taken together, do we find that which accounts for the actual movement of thought in the knowing of real objects. Wherein then shall we find this principle of movement? Kant finds it in the pure Imagination, which is not to be confounded with Imagination in the psychological sense, since it does not reproduce its objects, but produces or constructs them. Its function is to determine the forms of space and time in certain universal ways, under guidance of the categories and in relation to a given manifold of sense. It is thus the necessary medium between the purely intellectual forms of thought on the one hand, and the purely perceptive forms of space and time, together with the differences of sense, on the other hand.[1]

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[1] *Kritik*, §§ 18-23. A fuller discussion of the limitations of our knowledge will be found in Chapter x.

So far we have been directing our attention mainly to nature in its external aspect; and we must now show how the deduction of the categories affects the knowledge of self as an object. It was mentioned before that self as known is not self as it exists apart from our human faculties of knowing, if for no other reason than that all determinate objects, and therefore the self as the subject of determinate states, are only knowable under the form of time. This is quite a different view from that held by the dogmatic philosophers, according to whom the self is an immediate object of consciousness, or, in other words, a thing in itself. Kant, on the other hand, holds that the self as the supreme condition of the unity of knowledge is not identical with the self given as an object of knowledge. This follows from the account of the conditions of the knowledge of real objects. Thought is purely a faculty of combination, and requires to have the manifold of perception supplied to it before it can operate. Perception has two elements, the pure forms and the sensuous material, which are brought into relation with each other and with the categories through the figurative synthesis of pure imagination. Now imagination as determining the manifold in relation to time, the pure form of inner sense, makes possible the consciousness of self as existing in determinate states. But imagination cannot operate except in accordance with the categories: the "figurative" implies the "intellectual" synthesis. Hence the self is only knowable as co-relative to the object: *i.e.*, the same synthetical process which determines external (phenomenal) objects also determines the self as an internal (phenomenal) object. The "I" as a concrete object of knowledge must therefore be carefully distinguished from the synthetical "I," which as the source of the caregories is the supreme condition of the unity of knowledge, and therefore of the known world, in both its external and its internal phases.[1]

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[1] *Kritik*, § 24. See below, p. 86 ff.

The above is substantially the deduction of the categories; but it may not be without advantage to run over, in a less methodical way, the path by which Kant has come, and to point out the transformation in the ordinary explanation of knowledge which is the result of his enquiry. The great difficulty which seems to bar the way to a solution of the problem of philosophy, as it first presents itself to Kant's mind, may be expressed in the alternative: either there is no absoluteness in our knowledge, or we must be able to pass over from our conceptions to realities. The dogmatist while assuming that our knowledge is absolute or real, yet imagines that it can be obtained by means of mere conceptions; the sceptic maintains that conceptions cannot possibly yield reality, and hence he denies that there is any absoluteness in knowledge. Kant agrees with the former in holding that we have a knowledge of actual existence, and with the latter that from conceptions as ordinarily understood no explanation of the possibility of such knowledge can be given. Evidently therefore the reality or absoluteness of knowledge must be preserved by showing somehow that there are conceptions which do not lie apart from real objects, but are essential constituents in them. But to do this we must change our view at once of the nature of real things, and of the nature of conception. The transformation is partly effected in the *Æsthetic*, where it is shown that known objects are not things in themselves, but are relative to our consciousness. Existence and knowledge thus begin to come nearer to each other. If the existence that is real is existence in and for consciousness, things may be real and may yet be relative to our knowledge. To complete the transformation, however, we must show how there can be conceptions which are constituents in real objects. Abstract conceptions can of course never be such constituents; for, as defined, they are merely ideas in our minds, separated absolutely from realities without our minds. But a conception which is a form of our intelligence introducing unity into known objects and connecting them together, so far from being separated from reality, must evidently be essential to such reality as known by us. Kant therefore solves the difficulty raised by the sceptic by denying that all conceptions are separated from realities. His first way of conceiving the problem of knowledge, viz., How do we go beyond conceptions to realities? is shown to admit of no solution because it is essentially absurd; for conceptions separated from realities, can of course never tell us anything about realities. It is shown however that there are pure conceptions which, so far from being apart from realities, are actual constituents in them. For external objects, not less than internal, are relative to knowledge : and if so, conceptions or forms of thought may very well apply to objects. The only question now is as to the different elements within knowledge. And conception is evidently the element which gives unity to known objects, as sense is the element which gives diversity. Thus reality and knowledge, which were by the *Æsthetic* brought into proximity to each other, are shown by the *Analytic* to come close together and coalesce in the unity of sense and thought, resulting in the formation of a concrete knowledge which is at the same time concrete objects as known. And in this fusion of sense and thought, reality and knowledge, we have a systematic unity of knowledge which is at the same time a system of nature. The unity of nature therefore is a unity due to intelligence. And as of intelligence and therefore of nature the supreme condition is the unity of self-consciousness, in the reference of every known object to the single self we have the supreme condition at once of the unity of knowledge as a whole and of the unity of nature as a system of real objects. Kant's "secret" then, as Dr. Stirling might say, is the conversion of abstract conceptions into ultimate forms of thought, supreme conditions of knowledge, or elementary constituents of objects. But besides the synthetical unity of self-consciousness, the categories, the forms of perception and the manifold of sense, another element is introduced to complete the transformation of known reality. This element is the schema, which, as we have seen, Kant finds it necessary to refer to in the deduction of the categories, but which he also treats of separately.[1] A few words will be enough to complete the explanation of this part of his system.

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[1] *Kritik*, p. 127 ff. It will be observed that I only pledge myself to the substantial validity of the Deduction of the Categories. What modifications Kant's theory of knowledge requires I try to show in Chap. xii.

As the schema is the product of the pure imagination, Kant begins with the ordinary view of the nature of Imagination, and proceeds to work back to the critical conception of it. An empirical conception is capable of being verified in a perception because there is something common to both. Having in our minds, *e.g.*, the conception of a plate we may form the analytical judgment that a plate is round, but in order to determine whether the predicate is real or imaginary, we must go to perception, and ask whether we can find in it a determinate object corresponding to that predicate. We of course find that we can, for roundness is realised in the pure perception of a circle. Our analytical judgment thus becomes synthetical, and we are justified in regarding the conception as having a reference to something real. But when we pass from those conceptions which are simply abstractions from ordinary perceptions, and are therefore easily verifiable in perception, and ask how *pure* conceptions are to be realised, the answer is by no means so simple. The difficulty arises from the fact that a comparison of pure conceptions and pure perceptions shows not likeness but absolute unlikeness. The attribute implied in an abstract conception and expressible in a judgment is found *in concreto* in the perception from which it was originally abstracted; but a pure conception or category is not obtained by abstraction, and hence it is difficult to understand how it can be realised in perception. And yet the categories must apply to perceptions if real knowledge is possible at all. The difficulty here is of the same nature as that which we have all along had to contend with: it is in fact simply another form of the question, How are synthetical judgments *a priori* possible? how from mere conceptions can we obtain judgments which are binding on nature? We cannot get rid of the difficulty by assuming the pure conceptions to be applicable to things in themselves, as the Deduction of the Categories has sufficiently shown; nor can we say that pure conceptions are abstracted from real perceptions, and hence the categories cannot be derived from a mere analysis of objects supposed to be passively apprehended. The true answer lies in a hitherto unsuspected characteristic of Imagination. This we may explain by a reference to what takes place in the every-day processes by which we assure ourselves that we are not dealing with mere abstractions but with concrete realities. There is an essential distinction between an image and a schema. I have in my mind a conception of some object—say, that of a dog—which can be verified in perception since it has been obtained by abstracting from the differences of a number of individual objects. To assure myself that I am not dealing with a mere fiction, I bring before my mind the image of some particular dog which I have seen; but this mere image will not enable me to make a judgment about dogs in general, and hence I have to draw in imagination a sort of monogram or schema of a four-footed animal. The schema is therefore neither a conception nor an image, but partakes of the character of both. It at once conforms to the generality of the conception, and is kept within limits by the concrete image. We can see that the same process comes into play in our mathematical judgments. When *e. g.*

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[1] *Kritik*, pp. 140-6.

the geometer forms judgments in regard to the triangle he has more before him than the individual perception or image of a special triangle. The *image* of a triangle is an isosceles, a right-angled, an equilateral, or a scalene triangle; but the schema of a triangle is a sort of monogram or outline of a triangle in general. The image of a triangle can never be adequate to the conception of a triangle, for it cannot enable us to make universal affirmations: to say *e. g.* that every triangle has its interior angles equal to two right angles. In fact it is not images but schemata that lie at the foundation of our mathematical judgments.

Now these examples of the peculiar faculty possessed by the productive imagination of drawing monograms of objects of perception gives us the clue to the solution of the difficulty with which we are here concerned. If we can show that there is a transcendental product of the imagination enabling us to realize the categories, our difficulty will be resolved. Now it has to be borne in mind that transcendental philosophy does not treat of the special facts or laws of nature, but only of the *a priori* conditions which make known objects in general possible. To account for knowledge there must be, as has been shown, impressions of sense, that come into our consciousness because we can refer them to the "I" through the categories and the forms of perception. But these impressions, taken in abstraction from the *a priori* elements of knowledge, are mere detached differences or points of impression. So also the determinations of time and space as perceptions—which must be carefully distinguished from time and space as mere forms of perception—may be described as mere points or disunited parts of space and of time. Our special question at present is, how these points of impression, and points of space and time, enter into or constitute our knowledge of objects, whether these objects are the pure perceptions of mathematics or the mixed perceptions of ordinary consciousness and science. Now it is evident that there is a difference between imagination as it is exercised in our ordinary knowledge and imagination as transcendental, *i.e.*, as a necessary and universal condition of knowledge in general. In the latter case there can be no image; for we are dealing with the universal and necessary elements of knowledge, which enter into and constitute real objects. The imagination must therefore act on the *pure* forms of perception, and be guided by the *pure* conceptions of the understanding. But there can be no transcendental image giving concreteness to our pure conceptions. We can indeed have an image of a mathematical figure, but this image comes into play only in the special percepts of mathematics, with which we are not in transcendental philosophy concerned. While however there can be no pure *image*, enabling us to visualize, so to speak, our pure conceptions, there may be a pure *schema*. And as this schema is to be the condition in imagination of all possible phenomena, in so far as these are regarded from the universal point of view, it must be related to that form of perception which is common to all phenomena, whether internal or external: it must *i.e.* be related to the form of time. This schema is not to be confounded with the pure form of time any more than with the pure form of thought: it is, in fact, not a determination of time itself, but a universal determination of the manifold in relation to time. Now, there are various universal ways in which the manifold is determined in time; there is the synthesis of homogeneous units in time, or number; the synthesis of intensive units in time, or degree; the representing of the permanent in time; the representing of orderly sequence in time; and lastly, the representing of real co-existence in time. These various universal modes of determining the manifold in time constitute the schemata of Imagination, and the *process* by which the categories are applied to the manifold of sense through time is the schematism of the Understanding. Thus the categories are actualized and the knowledge of objects is made possible. And as the manifold of sense is that element of knowledge without which the Understanding would have nothing to operate upon, the necessity we are under of schematizing the categories makes it impossible that the categories should apply beyond the limits of the phenomenal world. The manifold of sense is knowable only as in time, and hence things in themselves as falling outside of time cannot possibly be known. The schemata therefore at once give individuality to the category and universality to the manifold of sense. In determining a house, *e.g.*, as an extensive quantity, I must combine its special parts in succession, and this successive addition of homogeneous units is guided by the category or intellectual form of quantity. Thus the units are put together by a process of numbering (the schema) in which I at once individualize the pure conception (the category) and at the same time bring those units (the manifold of sense) under it.[1]

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[1] Dr. Stirling now thinks (*Journ. Spec. Phil.*, xiv. pp. 257-285) that Kant, intending to make the schema a determination *of* time, changed his mind and made it a determination of the manifold *in* time; and that, in so doing, he fell back on "empirical instruction"—in other words, on sensible perception. To this I should reply, that to say the schema is *not* derivable from pure time, is not the same as saying that it *is* given in mere sense. The schema is virtually the *relation* of sense and thought. See below, Chapters v. and vii. Cf. Chap. xii.

CHAPTER IV.

RELATIONS OF METAPHYSIC AND PSYCHOLOGY.—EXAMINATION OF G. H. LEWES'S THEORY OF KNOWLEDGE.

THE most important result of the critical account of knowledge, as we have seen, is to establish the correlativity of the inner world and the outer world, as both alike only existing in relation to our intelligence. Enough has probably been said to make clear the radical distinction between the critical and the dogmatic account of that relation. But as it has been confidently asserted by the late Mr. Lewes and others that recent advances in biology and psychology have superseded Kant's account of the relation of subject and object, it may be profitable to consider shortly the main positions of the new psychology, and to contrast it with Kant's conception of psychology, as subordinate to metaphysic. I think it will be found that recent empirical psychology, not less than that prior to Kant, must be regarded as coming under the ban of "dogmatism." To attempt anything like a discussion of the various forms assumed by that psychology would lead us too far, and I shall therefore confine myself to the general theory of Mr. Lewes.

In common with all empirical psychologists Mr. Lewes speaks of the external world as existing independently of our consciousness, and as endowed with forces, by the action of which upon the organism, a certain molecular motion in the nervous system and a corresponding feeling in consciousness are set up in the living being. The external world he conceives of as "not the other side of the subject, but the larger circle which includes it;"[1] and feeling he calls "the reaction of the sentient organism under stimulus."[2] So far there is nothing to distinguish recent psychology from the psychology of Locke. But Mr. Lewes, following Fechner, claims that the nervous excitation and the feeling are not two independent phenomena, due to two distinct agents, the organism and the mind, but that they are different aspects under which the one agent, the organism, manifests itself. Sentience as well as the molecular movement of the nervous system is a reaction of the organism. Thus we have, on the one side, the Organism with its twofold aspect, and on the other side, the Cosmos, at once including the organism, and calling forth its reactions.

The first remark to be made on this view is, that, in so far as it is an account of the relation of the external world to the individual man, Kant would not have made any radical objection to it. It is, on the face of it, an explanation of the connection between man as a living being and the other objects which make up the world of nature. And we have Kant's own authority for saying that men considered as individuals are simply parts of nature. Looking at existence from the point of view of the different species of objects composing it, we may broadly divide objects into corporeal and incorporeal, or living and non-living things. And it is the object of the physical sciences to investigate nature in the first aspect, and of psychology to investigate nature in the second aspect. Just as physics deals with the laws of matter and motion, so psychology attempts to classify the various phases of mental life, and the successive stages through which the individual and the race pass.[1] The world as a whole therefore may be said, from this point of view, to comprehend both men and things, or, in Mr. Lewes' language, the Object is "not the other side of the Subject but the larger circle which includes it." There is nothing, again, in Kant inconsistent with the contention of Mr. Lewes, that to every mental state there is a correspondent nervous excitation. It is true that Kant speaks rather slightingly of the value of the physiology of the brain in the culture of the individual, on the ground that in it we are dealing with "what nature brings out of man, and not with what man, as a freely acting being, makes out of himself," and hence that, so far as physiological processes are concerned, man is "a mere spectator," since he "cannot be directly aware of what is going on in the nerves and fibres of his brain."[2] But the very form of his remark implies that there is an aspect in which man must be regarded as passive, and there is no denial but rather a recognition of the association of nervous and mental phenomena. How does it come then, that, agreeing so far with empirical psychology, and therefore in some sense admitting the independence of nature on man, Kant yet regards the separation of thought and things as the evidence and consequence of a false philosophy? The answer is perfectly simple. Psychology, as Kant conceives of it, is simply a discipline, helping us to widen and systematize our knowledge of the world of men, as physics enables us to learn the special laws regulating the world of matter. Psychology, in other words, deals not with the relation of intelligence to nature, but only with one aspect of nature itself. The classification of the various faculties of knowledge, the systematic statement of the gradual way in which our knowledge grows up, and the consideration of individual and national characteristics, tell us nothing about the essential conditions of there being for us any knowledge whatever. For here we are dealing not with the knowing subject in relation to the object of thought, but simply with one aspect of the known object. That we have certain mental states, which we may analytically distinguish as sensation, imagination, thought, &c., does not entitle us to say anything about the primary conditions of our knowledge of nature. When we have completed our account of mental states as objects which we know, we have left untouched the question as to the relation of those mental states, together with things in space, to our intelligence as capable of comprehending both in the unity of a single known world. In other words, psychology is an empirical science, treating of the nature of the individual man as a known object. It has no occasion to ask how knowledge is possible, *i.e.*, what are the conditions without which we could have no knowledge either of ourselves or of external things, but leaves this problem to be dealt with by metaphysic. To suppose, as Mr. Lewes does, that Kant would have been compelled completely to alter his metaphysic, had he only seen that the "*a priori* elements" might be explained as "originally formed out of ancestral sensible experiences" is a delusion arising from an incomplete apprehension of what Kant's problem was. "Even granting," Kant would have said, "that we as individuals inherit certain tendencies, this in no way affects the question as to the essential conditions of knowledge. No matter how we as individuals have come to obtain our knowledge, at least it is not denied that we do have knowledge; I ask you, therefore, what theory you propose in explanation of this fact. That we have a knowledge of external objects and also of our own mental states is a fact; but it is not an explanation of the fact. It is this explanation which I have tried to give. And I maintain that, on the supposition of the independence of nature, whether as external or internal, on our intelligence, no consistent explanation of the fact of knowledge is possible."

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[1] *Problems of Life and Mind*, vol. i., p. 195.

[2] *Ibid.*, p. 210.

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[1] *Metaphysische Anfangsgründe d. Naturwissenschaft*, Vorrede, pp. 357-362.

[2] *Anthropologie*, p. 431.

And this leads me, in the second place, to say that Mr. Lewes's psychological theory is simply a new form of that dogmatism to which Kant so strongly objects. It assumes the essential independence of nature on intelligence, and in so doing confounds the logical distinction of external and internal phenomena, as existing only for intelligence, with the real separation of subject and object.

No point is more emphatically dwelt upon by Mr. Lewes than the identity and yet distinction of neural changes and changes of feeling. The ordinary conception of the relation of body and mind is that of two independent things, substances, or agents, externally acting and reacting upon each other. This conception must, he asserts, be rejected. We cannot accept the view of the Rational Psychologists, who "treat mental facts simply as the manifestation of a Physical Principle, at once unknowable and intimately known, a mysterious agent revealed to consciousness;"[1] we must, on the contrary, "frankly accept the biological point of view, which sets aside the traditional conception of the mind as an agent apart from the organism."[1] Having got rid of this fiction of abstraction, what shall we have to substitute? Mr. Lewes is equally clear on this head. The only agent is the organism. "To many thinkers, the contrast" of objective and subjective "seems far more than that of aspects, it is that of agents." But "what we know is that the living organism has among its manifestations the class called sentient . . . and states of consciousness. . . . It is not known, nor is there any evidence to suggest that one of these classes is due to the activity of the organism, the other to the activity of another agent. The only agent is the organism."[2] When we "seek the agent of which all the phenomena are the actions, we get the organism."[3] In place of the conception of two agents, the organism *and* the mind, we have to put the conception of a single agent, the organism. All the actions performed by a living being, including those that have usually been set apart as mental, and ascribed to an independent source, must now be ascribed to the organism alone. Evidently, then, the organism will have a double duty to perform: to it the operations formerly ascribed to the body, as well as those ascribed to the mind, must both alike be ascribed. We have thus a single agent, performing diverse operations. But these operations have at least this in common that they are alike predicable of a single agent. The organism, *e.g.*, is not only the bearer of neural tremors, but it feels, thinks, and wills. And it must be observed that, while all vital actions are now perceived to belong to the organism, we are still compelled to draw a broad distinction between subjective phenomena—those formerly ascribed to mind—and objective phenomena—those formerly attributed to body. Thus the organism has two sets of functions, broadly contrasted as subjective and objective. Now it has always been held, even by those who maintained the existence of a mind distinct from the body, that there is the closest correspondence between the two. This conception must be retained, but it must be transformed in such a way, that the correspondence shall be regarded as not exceptional, but perpetual.

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[1] Lewes's *Study of Psychology*, § 1.

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[1] Lewes's *Study of Psychology*, § 4. [2] *Ibid.*, § 6. [3] *Ibid.*, § 7.

Every event, then, has at once an objective and a subjective aspect. What exactly does this mean? It means that "states of consciousness are separable from states of the organism only in our mode of apprehending them."[1] Now there is a certain imperfection of expression in this way of stating the matter; for, if the organism is the sole agent, "states of consciousness" *are* "states of the organism," and therefore should not be contrasted with them. What Mr. Lewes means, however, is evident enough so far: he means, that the "sentient changes" of the organism are inseparable from its "neural changes." But even after this explanation there is an ambiguity in Mr. Lewes's words to which it is important to refer. States of consciousness, we are told, are separable from neural changes, "only in our mode of apprehending them." Now our "mode of apprehending" both kinds of change must be by "states of consciousness," and hence it would seem that states of consciousness are separable from neural changes only in states of consciousness. How then can the broad contrast of subjective and objective be still preserved? Instead of a broad contrast, the relation would seem to be one of subordination, the subordination of the neural affections to the states of consciousness. There can be no doubt, however, that Mr. Lewes means to affirm, not a relation of *subordination*, but a relation of *coördination:* both sets of changes he regards as on the same level. By "states of consciousness" we must accordingly understand a series of feelings, taken in abstraction from a series of movements in the organism. Mr. Lewes may therefore mean, either (1) that, while in our mode of apprehending them, the two kinds of changes are "separable," in reality they are identical, or (2) that they are identical in being parallel phenomena of the same organism. Mr. Lewes, as it seems to me, does not distinguish between these two very different points of view: he virtually assumes the former, while ostensibly he is only asserting the latter, and it is by this confusion of thought that he is enabled seemingly to preserve at once the separation and the identity of the sentient and the neural changes. "The living organism," he says, "has among its manifestations the class called sentient; and these are known as *sensible affections, i.e.*, the changes excited by the contact of external causes, and assignable to visible organs of sense; and *states of consciousness, i.e.*, the changes of feeling, excited by internal causes, and not assignable to visible organs."[1] "What on the objective side is material combination is on the subjective side spiritual combination; mechanical and logical are only two contrasted aspects of one and the same fact."[2] "*All* psychological processes are objectively organic processes," and "the mechanism of these processes may be expressed in objective or subjective terms at will, sensorial changes being equivalent to sentient changes."[3]

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[1] *Study of Psychology*, 4.

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[1] *Study of Psychology*, § 6.

[2] *Ibid.*, § 17.

[3] *Ibid.*, § 19.

"A sensation or a thought is alternately viewed as a physical change or as a mental change."[1]

It will be admitted, I think, that there is an undoubted want of precision in the use of terms in the above extracts. On the one hand, we are told that the *same* event has its "objective and subjective aspect," that "mechanical and logical are only two contrasted aspects of *one and the same* fact," and that "sensorial changes are *equivalent to* sentient changes." On the other hand, it is pointed out that sensible affections are "assignable to visible organs of sense," while states of consciousness are "not assignable to visible organs," and that "a sensation or a thought is alternately viewed as a physical change or as a mental change." Now if the "event" or "fact" is "one and the same," it cannot be assignable to different organs; if there are two "events" or "facts," it is not correct to speak of them as "one and the same." As Mr. Lewes insists upon interpreting everything by what we know, and refuses to take refuge in the unknowable,[2] we must conclude that, as the two sets of events are distinct to us, they cannot be regarded as in themselves "identical" or "equivalent," and that in predicating identity and equivalence of them, Mr. Lewes only means to insist on their thorough-going parallelism; *i.e.* that there never is a "molecular change" without a corresponding "sentient change," and *vice versa*, and further that molecular and sentient changes are "identical" only in the sense that they are both alike predicable of "one and the same" organism, of which they are "aspects."

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[1] *Study of Psychology*, § 38.

[2] See especially *Problems of Life and Mind*, vol. ii., prob. vi. 2. Cf., however, Hodgson's *Philosophy of Reflection*, vol. i., p. 189 ff, where the contradictory utterances of Mr. Lewes are cited and discussed.

Now this is none the less a dualism that it masquerades as a monism. A monism it cannot be, unless the mere assertion of the identity of the two aspects is allowed to pass muster as a proof of that identity. The series of feelings which constitutes the "subjective" aspect goes on independently of the series of movements in the organism, and of all relation to intelligence. As the subjective aspect cannot be at the same time the objective, the two cannot logically be brought into any relation with each other. As described by Mr. Lewes, feeling is no more comprehensive of the molecular movements than the molecular movements comprehend feeling; we have simply a series of neural changes, and a series of feelings, without any explanation of how they come to be known as standing in necessary relation to each other. They are *said* to be related, but they are tacitly separated from each other, and assumed to be independent. No other explanation indeed is consistent with the premises of Mr. Lewes: for a series of feelings cannot be aware of itself as a series, and without such consciousness of itself, a consciousness of the neural changes is impossible. The root of the imperfection in this conception of subject and object consists in the abstract separation of intelligence as knowing, both from the series of feelings and from the molecular movements. Thought is conceived of as a mere passive spectator of the subjective and objective aspects, and consciousness as a light that reveals but has nothing to do with the constitution of its objects. But when the object in its two aspects is allowed to fall apart from self-consciousness, the mental states necessarily become a mere series of feelings which, as Kant says, are "as good as nothing for us as thinking beings;" and the nervous changes, being separated at once from the mental states and from the supreme unity of self-consciousness, necessarily sink into a mere succession of movements independent of all relation to consciousness. Only when we see, that without the activity of intelligence in the constitution of both objects alike no real knowledge is possible, do the separate elements of knowledge come together in the unity of a world at once intelligible and real. The contrasted "aspects," in short, are but logical abstractions, which are not in themselves objects of knowledge at all, but merely elements which, when regarded as in essential relation to each other and to self-conscious intelligence, combine in the concrete life of knowable existence.

It may perhaps be replied that Mr. Lewes is right in regarding himself as a monist, because he denies the existence of two separate agents, the organism and the mind, and maintains that there is but one agent, the organism. This, however, is a way of securing monism that makes the opposition of the two "aspects" unmeaning: it is simply an assumption of the correlativity of intelligence and nature, expressed in terms that rob intelligence of its constitutive activity, and make the explanation of real knowledge impossible. The nature of any known reality, as Mr. Lewes is continually reminding us, consists in the sum of its properties. There is not, on the one hand, an independent thing or substratum beyond knowledge, and, on the other hand, the known properties by which this substratum reveals itself to us; but the only reality is the properties taken together as a whole. The organism, then, we must not for a moment conceive of as an unknown something, now manifesting molecular changes, now sentient; it is simply a term designating a certain complex of properties. *We* group the one set and call them body, and another set and call them mind, but body and mind are but names connoting respectively the molecular and the sentient changes, just as organism is a more general term comprehending both under itself. "We learn to distinguish the different parts of our organism and their different activities; generalizing and abstracting, we get the conception of body representing one group, and of mind as representing another."[1]

Let us look first at the molecular changes—the "objective" aspect of the organism—which form one of the groups of properties comprehended under the general term organism. Here we have, Mr. Lewes tells us, simply the "mechanical sequence of objective motions, and could we see the molecular changes in the nerves, centres and muscles, we should still see nothing but sequent motions."[2] So far, therefore, the organism is a term for molecular movements. And movements, of course, pre-suppose material atoms that move, and the motion of material atoms must be comprehended under the higher conception of force. Now it seems evident enough that so far we are outside of the region of sentiency altogether. An organism conceived of simply as recipient of force, is not as yet conceived of as sentient. Were there nothing but molecular movements, we should have no reason whatever for predicating sentiency of the organism. And it must be observed that excluding sentiency of every kind, and therefore consciousness, there is so far no reason for calling the group of movements named as body "objective" rather than "subjective;" for, as Mr. Lewes himself says, "only when sentient activities have become so developed that a conscious ego or personality has emerged from them, which establishes distinctions between one class of feelings and another, can this famous contrast of object and subject arise."[1]

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[1] *Study of Psychology*, § 11.

[2] *Ibid.*, § 17.

The organism, therefore, conceived of as a group of neural units, is neither object nor subject, but lies outside of the region in which this "famous contrast" has place. There is another group of properties, however, the "sentient changes," comprehended under the term organism. These are conscious states, or at least states that "may be" conscious. As these states are said to be purely "subjective," and to be contrasted with the neural changes which alone are objective, they must be defined as simply a series of feelings. And here again it must be observed that there is no distinction of object and subject, for, if there were, it would not be correct to classify feelings as subjective and movements as objective; feelings would be a combination of subject and object.

But these two groups of properties are classed together as the objective and subjective aspects of one and the same organism. And as there is no "agent" but the organism, the distinction of objective and subjective must be made by the organism. Thus, while the two groups of properties are separate and distinct, they are yet brought together and recognized as objective and subjective by the organism, as conscious both of itself and of its contrasted states.

The facts then are, as we must now suppose, that two sets of functions are distinguished as respectively movements and feelings, and are yet brought together by the organism as conscious of both alike, and therefore as conscious of each as at once distinct and yet related to the other. Now, an organism that separates between its own subjective and objective aspects, apprehending two distinct sets of functions as in essential relation to each other, must be self-conscious—conscious of self as a unity combining these opposite "states." The organism thus becomes a term for a self-conscious being, comprehending at once subject and object. We may, if we please, still retain the term organism, but evidently what we are speaking of is neither movements nor feelings, but that which comprehends both alike as in necessary relation to itself. Thus, by simply interpreting Mr. Lewes's terms, so as to bring out their implications, we find that in one of its senses the term organism is an outlandish name for *self-conscious intelligence.*

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[1] *Study of Psychology*, § 11.

But with this pleasant recognition of an old friend with a new face the opposition of movements as "objective" and feelings as "subjective" loses its plausibility. We have seen that, taken by themselves, they cannot be regarded as either objective or subjective, but are both equally indifferent to such a distinction. Object and subject exist only for that which is conscious of the distinction of object and subject. Evidently, therefore, movements must be regarded as objective only in the sense that they exist for a subject conscious of them—a conscious subject which Mr. Lewes, by an unpardonable abuse of language, calls the organism. What movements, apart from our knowledge of them, may possibly be, it is impossible to say. They could at best only be an unknown and unknowable something lying beyond the realm of knowledge, and such an "unknowable" Mr. Lewes, above all others, is debarred from admitting by his frequently expressed denial of any one's right to assert the reality of that which is unknown, not to say unknowable. The "objective" aspect is therefore also "subjective," in the sense that it exists only in relation to a conscious subject of it. Similarly, the so-called "subjective" aspect is not purely subjective, since a feeling apart from its object is unthinkable. But if movements and feelings are alike subjective and objective, *i.e.*, exist only as relations to a conscious intelligence, we must no longer oppose them as coördinate and independent phenomena, but must regard both as objects of an intelligence that has each before it and in essential relation to it as an object which it constitutes.

Is there, then, no distinction between the so-called "objective" and "subjective" aspects? Most assuredly there is; but it is not the distinction of the "objective" from the "subjective"—both alike implying the synthesis of object and subject—but simply the distinction of one class of objects, as a given sum of properties, from another class. A series of molecular movements cannot be identified with a series of feelings, but it is not less true that a series of feelings cannot be identified with self-conscious intelligence. Self-consciousness is the ultimate unity comprehending all relations as manifestations of itself. And hence the difference between Metaphysic, the science of intelligence as such, and Psychology, the science of man, is, as Kant maintains, that between the general science of reality and the science of a special aspect of reality. The fundamental principle of philosophy is the unity of subject and object, and psychology, accepting this principle, must go on to enquire into the characteristics of that unity as specified in the sensitive and conscious nature of man. This will be more clearly seen if we go on to ask what is Mr. Lewes's conception of the relations of physiology and psychology.

Starting from the view that there is a strict parallelism between the objective and the subjective factors, Mr. Lewes goes on to say, that "psychology is somewhat less, and somewhat more than the subjective theory of the organism. It is less, because restricted to the sentient phenomena, whereas physiology embraces all vital phenomena. It is more, because it includes the relations of the organism to the social medium, whereas physiology is concerned only with the relations to the cosmos."[1] The parallelism is thus restricted to the "molecular changes" of the nervous system, and the "sentient changes" corresponding to them. Physiology and psychology are two special branches of the general science of biology. The latter "includes plants, animals and man, with the respective subdivisions, phytology, zoology and anthropology. Each of these is again divided into morphology, the science of form, and physiology, the science of function." "I must reject the separation of psychology from biology so long as I am unable to separate mind from life."[2] It is thus evident that Mr. Lewes conceives of psychology as a special science on the same level as physiology. Both, moreover, deal, not with the structure or form of the organism, but with its functions; hence the difference between them must be in the different functions of which they take note. They are both said to be biological sciences, because they deal with the functions of the "organism." With what "functions" then are they respectively concerned? Physiology is limited to a consideration of the mechanical functions, which may be all reduced to "molecular changes."

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[1] *Study of Psychology*, § 15.

[2] *Ibid.*, § 5.

The physiologist "traces the sequence of stimulation through sensory nerve, centre, motor nerve and muscle."[1] Physiology is the theory of "the sentient functions as the direct activity of the organs."[2] Psychology, on the other hand, deals with sentient functions, with "feelings as such, and their relations to other feelings," with "changes in feeling," with "processes which are conscious processes, or which *have been* and *may again* be conscious."[3] It is the theory of the "soul, its functions and acquired faculties, considered less in reference to the organism than in reference to experience and conduct."[4] Physiology and psychology are thus concerned respectively with the "objective" and the "subjective" aspects of the same event. "Physiology deals directly and chiefly with the objective aspect of sentient facts, and their relation to the visible organism,"[5] *i.e.* to the organism as having "solidity, form, colour, weight and motion."[6] Psychology deals with "the same facts in their subjective aspect as states of feeling, not as organic changes";[7] with the "ideas and volitions that constitute the subjective, intelligible self."[8] But although each of these branches of biology is directly concerned with a different aspect of the organism, each is indirectly concerned with the other aspect also, for both deal with the sentient organism. Were the physiologist to limit himself entirely to molecular changes "the sequences would have no more significance for him than similar sequences in a machine;" and, on the other hand, the psychologist, if he is to "know the subjective facts with accuracy and fulness . . must learn their objective conditions of production." Physiology and psychology are further contrasted as the science of "the conditions of production and the science of the "products." The place of physiology is "that of the *organic conditions of production*; the place of psychology being that of the *products.*" The two sciences are thus complementary of each other. "Although the exclusive province of the psychologist is that of the sentient changes as products, the aid of physiology is needed to supply the conditions of production; it alone can disclose the operation of changes which escape subjective appreciation."[1] Hence "all psychological processes are objectively organic processes."[2]

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[1] *Study of Psychology*, § 8. [2] *Ibid.*, § 9. [3] *Ibid* § 8. [4] *Ibid.*, § 9. [5] *Ibid.*, § 8. [6] *Ibid.*, § 6. [7] *Ibid.*, § 8. [8] *Ibid.*, § 6.

Physiology, then, in so far as it is limited to the mechanism of the nervous system, is, according to Mr. Lewes, concerned with molecular changes, which may further be regarded as related to the stimuli which produce them; in other words, its province is with changes that can be brought under the categories of motion and force. Psychology, on the other hand, treats of feelings, whether these are actually known as feelings by the agent or no. And this distinction of movements and feelings Mr. Lewes naturally, from his point of view, identifies with the distinction already considered of the "objective" and the "subjective" aspect of the organism. Now, it must be repeated that this distinction of objective and subjective has really no proper application, until the relation of the movements and the feelings to a conscious intelligence is recognized. And in the next place, it must be remarked that *when* the relation of movements and feelings to a conscious Intelligence is recognized, there is no longer any propriety in calling the former "objective" and the latter "subjective;" each is objective or subjective according to our point of view. The "molecular movements" may be regarded as "subjective," when they are contemplated as objects of a personal consciousness; the feelings may be regarded as "objective" when they are opposed to the self to which they are related. In other words, subject and object only exist in relation to each other. But Mr. Lewes further contrasts physiology as the science of the "conditions of production," with psychology, the science of the "products." Now it is of course a truism that apart from the molecular changes of the nervous system, there could not be in the individual man any succession of feelings, and therefore there could not be any consciousness of feelings. Nevertheless the molecular changes are not the cause of the feelings. For, for one thing, these movements are dependent upon stimulation by an extra-organic force, and this is as much a "condition" of production as the movements. But the great objection to this contrast of "conditions of production" and "products" is that it really abstracts not only from the new element introduced by consciousness, but even from the new element introduced by the presence of life. Mr. Lewes says that, were the physiologist to limit himself to molecular changes, "the sequences would have no more significance for him than similar sequences in a machine." And the fact is that they *have* "no more significance" to the physiologist as such than "the sequences in a machine." Molecular movements are molecular movements, no matter whether they occur in a "machine" or in an animal organism. It no doubt is a very imperfect account of a living being simply to describe the molecular movements that occur in its nervous system; but the "imperfection" lies solely with those who take this as a sufficient account of life, not with the physiologist as such, who has completed his task when he has done so, and who puts forward no theory as to the position of the facts of his science in a general scheme of knowledge and existence. Mr. Lewes talks as if the physiologist could not advance a step without recognizing that he is dealing with the "objective" aspect of the organism, or the "conditions of production." In truth, the physiologist need not pronounce any opinion on the question at all, and as a physiologist it is not his business to pronounce any opinion. But while the physiologist must be freed from overlooking the nature of the sentient organism, Mr. Lewes cannot. For to speak of molecular movements as the conditions of production of feeling and consciousness, is simply to apply the category of cause and effect where it becomes meaningless. A movement in the sentient organism is not the cause of which a feeling is the effect. We can follow up the line of molecular movement from the vibration of a candle, through the vibration of the ether, to the vibration of the nervous system, and we end as we began with molecular movement. If we please, we may call the molecular movements last considered an "aspect" of the organism, but we have no right to call it the "objective" as opposed to the "subjective" aspect of the organism, for it is no more "objective" than the vibration of the molecules constituting the candle. We have therefore no right to pass from this "molecular" aspect of the organism to its "sensitive" aspect, without allowing for the change in our point of view. Contemplated in its molecular aspect, the organism not only does not differ from a machine, but it does not differ from a stone. The highest category we can apply to it is that of *reciprocal action*, and that we can equally apply to the knocking of two stones against each other. When therefore we advance from this "molecular" aspect of the organism to its "sensitive" aspect, we are compelled to substitute a new and higher conception of the "organism." It is not right even to speak of the extra-organic thing as the cause or force, of which the molecular movement in the organism is the effect; we must at least recognize that the co-operation of the molecules of the organism is required before there can be any "stimulation." Much less even can it be correct to speak of the molecular movements as the "conditions of production" of feelings. The most essential condition of production is the life manifested in the organism, and apart from that, the molecular movements are nothing. While therefore we must recognize that molecular movements are presupposed in the existence of sensations as animal feelings, there is in these sensations a new factor which is not implied in the molecular movements. We may if we please contrast this "sentient" aspect with the "molecular" aspect, but it is absurd to contrast them as "objective" and "subjective." It is perfectly true that there is no sensation without an appropriate molecular movement, but only in the sense in which there is no molecular movement in the organism without a corresponding molecular movement in the extra-organic world. The relation is therefore not a parallelism, but a subordination. The molecular movements take on a new hue by being viewed as pertaining to a living being; life in fact becomes their "condition of production." For while there are molecular movements which exist apart from life, these *particular* molecular movements can only take place in a living organism; and if we in any way alter the nature of the living organism, we alter the molecular movements correspondently. Hence the movements in the higher animals are very different from the movements in the lower; the complexity and adaptation of the parts, which is one "aspect" of the intensity of the life, is the condition of the *special* molecular movements. It is necessary therefore to insist strenuously upon the *subordination* of the mechanism to sentience (in the sense explained). We must refuse to recognize the adequacy of the phraseology which speaks of molecular movements as the cause of which sensations are the effect. If we are to apply the category of cause and effect at all, we must rather call the "sentience" the cause of the molecular movements, since apart from the sentient being these particular movements could not take place. We have in fact to view sentience as the ideal aspect of that co-operation of organs which is the essential condition of life, and which alone entitles us to speak of an "organism."

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[1] *Study of Psychology*, § 8.

[2] *Ibid.*, § 19.

Thus we have the mechanism and the organism, manifesting themselves respectively in molecular movements and in feelings. Higher still we have consciousness. Just as in passing from molecular movements to feelings, we have a subordination of the former by the latter, so, in a still more striking way, we have now the subordination of movements and of feelings to consciousness. And this subordination of course varies in different individuals in accordance with their intelligence (which is just another name for the subordination). The essential difference between life and consciousness lies in that subordination of all feelings to a single self-consciousness, which is the condition of experience. Now for the first time the distinction of "object" and "subject" appears; but it so presents itself as to show the absurdity of opposing feelings as "subjective" to "movements" as objective. Feelings comprehend and explain movements, consciousness comprehends and explains both. Thus both feelings and movements are alike objects of consciousness, and are at once objective and subjective, since they are possible only as relations to consciousness. Now if this is at all a correct view to take, it is evident that Mr. Lewes's conception of the relations of physiology and psychology cannot be accepted. As a science of molecular movements, physiology does not fall within the range of psychology, and, in fact, has no further bearing on psychology than to illustrate the relation of sentient and conscious life. But this just means that psychology is a philosophical science, and therefore has to consider intelligence as displayed in the manifestations of living and conscious beings. Psychology, in fact, is compelled, whether it will or no, to go upon certain metaphysical presuppositions, because metaphysic enquires into the relation of subjects and object, and it is impossible to treat of consciousness without asserting or implying some theory of those relations.

As there are two aspects in which the organism may be contemplated, so, it is held by Mr. Lewes, there are two ways in which we may endeavour to solve the problem of psychology—the way of "observation of external appearances," and the way of "introspection," the latter differing from the former "only in that the phenomena observed are subjective states or feelings, and not objective states or changes in the felt."[1]

Now the supposition that such a method of introspection is possible, rests upon an untenable separation of feeling and its objects. It is, of course, perfectly true that a man experiences feelings that are experienced by no one else, but it is not true that he can experience a *mere* succession of feelings, *i.e.*, a succession of feelings occurring in his own mind apart from all relation to thought and its objects. A being conceived of as but the medium of a succession of feelings is a being that is not conscious. Apart from reference to a thinking self—a self which is not a mere colourless and passive medium, but is active in the constitution of the feelings that pass—there is no knowledge of feelings, and therefore no experience. If we imagine a being to whom each feeling in turn arises and passes away without being fixed in relation to a central self, we get the nearest conceivable approach to introspection. But such a being could never form a theory of itself, because, not only would it have no power of connecting the data of its experience in a system of thought, not only would it be unable to draw inferences, but it could have no *data* from which, by inference, to construct a system. We may suppose the lower animals to be in this condition; but then the lower animals do not form a system of psychology, or connect their feelings in a coherent whole of experience. Thus the observation of merely "subjective states" is an impossibility, because there are no merely "subjective states" to observe. Every feeling that is known, and enters into the context of experience, is by that fact a relation between subject and object, or depends for its constitution upon the intelligence to which it is related. We cannot observe bare feelings, because the fact that they are observed, *i.e.*, are referred to the unity of self-consciousness, makes them not mere passive feelings, but thoughts or relations. Introspection, therefore, in so far as it is said to be the "observation of subjective states or feelings," is an absurdity.

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[1] *Study of Psychology*, § 62.

Not less certain is it that "observation of external appearances" is an impossibility. We can certainly have a knowledge of a world in space, and in that sense we can observe "external appearances"; but it is not possible to observe that which is purely "objective," in contrast to "subjective states or feelings." For that which is known as an object, becomes by that very fact a relation to consciousness; and only so does it enter into and become part of the world of experience. Why then is a distinction usually made between introspection and observation? The answer is simple enough. In the first place, there are feelings which we do not think of ascribing to the extra-organic world, but which we refer to the organism itself, and in this sense we may, if we please, speak of these as "subjective states or feelings." In truth, however, they are no more mere feelings, than extra-organic objects are feelings, for they exist in experience only as relations to a conscious intelligence, and therefore are at once objective and subjective. In the second place, introspection and observation may be contrasted as the less to the more complex. Thus we may say that in our ordinary consciousness we have a sensation of light, and that this is known by simple introspection; whereas, if we wish to get a knowledge of the process by which we come to have that sensation, we must appeal to "observation." But the contrast of feeling and object, introspection and observation, is a false one.[1] We are not entitled to say that the sensation of light is purely subjective, on the ground that we do not know its conditions of production in the organism; it is just as much an object, determined by relation of the permanent self to it, as is the knowledge of the retina and the nervous system. The contrast here is not between subjective and objective at all, but between less and more concrete knowledge, between simple relations and complex relations. In considering the nature of knowledge, as we are compelled to do when we speak of methods of psychology, we have no right to speak of the organism as if it could be known to exist apart from relation to an intelligent apprehension of it; and in formulating our knowledge, we must insist upon the strict continuity in the development of knowledge, and therefore in the precedence of the less to the more complex.

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[1] This false contrast runs through the whole of Fechner's "*Psychophysik*" and Wundt's "*Physiologische Psychologie.*"

It will still further illustrate the critical theory of knowledge if we contrast it with Mr. Lewes's "psychogeny," according to which knowledge is held to be "partly connate, partly acquired, partly the evolved product of the accumulated experience of ancestors, and partly of the accumulated experiences of the individual."[1] Kant's view of the origin of knowledge, it is held by Mr. Lewes, is fundamentally erroneous, because it supposes the individual to bring with him *a priori* conditions of knowledge, and even *a priori* experiences. And the reason of the imperfection is that biology and psychology were not at the time it was formed sufficiently advanced to suggest the true interpretation. Mr. Lewes, therefore, claims that he has given the only theory of knowledge which reconciles the conflicting claims of the *a priori* and *a posteriori* schools of philosophy. This theory maintains that the individual inherits what may be called "*a priori* conditions of knowledge, and even *a priori* experiences . . . which must determine the result of our individual *a posteriori* experiences." Such *a priori* conditions of knowledge and experiences are for the individual *a priori;* that is, they are not acquired by his own individual experience, but were acquired by his ancestors and have been transmitted by them to him. Still they were obtained by experience, and hence are true only within experience. Kant is therefore mistaken in supposing that "the mind brings with it a fund of *a priori* knowledge in which no empirical influence, personal or ancestral, is traceable."[1] Had he only seen that *a priori* knowledge is simply "the organized experiences usually termed instinct, which we inherit from our ancestors, and which form, so to speak, part of our mental structure," he would have also seen that his view of *a priori* knowledge is altogether a mistake. We may be said to be born with "a knowledge of space, with a knowledge of causality, &c., because although these registered tendencies were originally framed out of sensible experiences, we who inherit the structure so modified only need the external stimulus, and forthwith the action of that structure produces the pre-determined result."[2]

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[1] *Problems of Life and Mind*, vol. i., p. 120.

I have already examined Mr. Lewes's view of neural process and sentience as the subjective and objective aspects of the one organism. What I propose at present to consider is whether the knowledge of Nature as a coherent system of objects is really explained on the "psychogenetic" theory expressed in the remarks just quoted. I shall say nothing as to Mr. Lewes's misunderstanding of Kant's theory, which will be at once apparent to any one who has followed the account of it given above. I shall rather ask whether Nature, as a world of knowable objects revealed to consciousness, can be accounted for on Mr. Lewes's premises. Does the doctrine of evolution, when extended by Mr. Lewes so as to include the evolution of a known world in consciousness, do what it pretends to do? Does it really supersede Kant? Does it not rather fail altogether to grapple with Kant's problem?[1]

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[1] *Problems of Life and Mind,* vol. i., p. 440.

[2] *Ibid.*, p. 446.

In his "psychogenetic" theory of knowledge Mr. Lewes makes certain assumptions which he may, perhaps, be quite entitled to make, but which, at any rate, it is important to see that he does make. In the first place, he assumes that nature or "the cosmos" exists independently of its relation to consciousness, and that consciousness is gradually evolved. The object is "not the other side of the subject, but the larger circle which includes it." True, "the cosmos arises in consciousness:" "the objective world, with its manifold variations, is the differentiation of existence, due to feeling and thought;" but this differentiation is the result of the forces manifested by the cosmos, as acting on the living organism. Hence, in the second place, it is assumed that organisms exist to be acted upon by the forces of the cosmos. As an evolutionist Mr. Lewes would no doubt say that originally animal organisms were "evolved" from cosmical forces; but this has no immediate bearing on the psychogenetic theory of knowledge. Let us suppose, then, that the cosmos as possessed of various forces exists, and that animal organisms have been evolved from them. The question will then be: Granting animal organisms to have come into existence, and to be gradually developed by their reaction against material forces, can it be shown how the knowledge of the world of nature grows up, as the result of such continuous action and re-action? Mr. Lewes holds that it can, and it is in the account which he gives of the evolution of consciousness from the unconscious that we are at present interested.

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[1] With what follows compare Mr. Green's criticism of Lewes's "psychogeny," to which I am much indebted. *Contemporary Review*, xxxii. pp. 762-72.

An organism exists only in relation to the cosmical medium or to its environment. And, although we distinguish each organ or function logically, we must be careful to observe that no organ or function really exists or operates independently, but only in relation to the complex of organs and functions and to the medium in which it is placed. Each function of an organ is the product of the interaction of structure and stimulus. The structure of the organism, *e.g.*, "is built up from materials originally drawn from the external medium, but proximately drawn from its internal medium, or plasma." Nutrition is a process which involves the co-operation of the organism and the inorganic material, and both are required for the final product. Now, "there is a marked tendency in organic substance to vary under varying excitation, which results in the individualization of the parts, so that growth is accompanied by a greater or less differentiation of structure." But the parts "are not only individualized into tissues and organs, but are all connected." Again, while the reaction of an organ is determined by its structure at the time it reacts, "yet the very reaction itself tends to establish a modification which will alter subsequent reactions;" "by the exercise of an organ its structure becomes differentiated, and each modification renders it fitted for more energetic reaction and for new modes of reaction." Function and structure are thus mutually dependent. Finally, as the structure is modified by its reactions on stimulation these modifications "tend to become transmitted to offspring." Thus, gradually, a great change in the structure, and therefore in the functions, of organs is produced. Thus the vital organism is evolved from the bioplasm; in simpler language, the living organism assimilates inorganic substance, and so grows, differentiates, changes, and transmits its modified structure to offspring.[1]

Let us now see "how the psychical organism is evolved from what may be analogically called the psychoplasm." Here we do not consider the whole vital organism, but only its "sensitive aspects;" we "confine ourselves to the nervous system." The movements of the bioplasm consist of molecular compositions and decompositions, out of which arises the whole mechanism or structure of the organism. The bioplasm may be viewed in two aspects, the process of assimilation and the material assimilated. Similarly, the psychoplasm may be viewed as, on the one hand, the nervous structure or medium, and, on the other hand, the function of the nervous structure. As the bioplasm has molecular movements, so the psychoplasm has "neural tremors." "The forces of the cosmical medium, which are transformed in the physiological medium [the whole vital organism] build up the organic structure, which in the various stages of its evolution reacts according to its statical conditions, themselves the result of preceding reactions." The forces of the cosmical medium thus act in conjunction with the organism itself, and the product is the special structure of the organism. This organic structure, again, is gradually modified by the exercise of the vital functions of the organism, and hence the reactions under the same external stimuli are altered. And "it is the same with what may be called the mental organism. Here, also, every phenomenon is the product of two factors, external and internal, impersonal and personal, objective and subjective. Viewing the internal factor solely in the light of feeling, we may say that the *sentient material*, out of which all the forms of consciousness are evolved, is the psychoplasm incessantly fluctuating, incessantly renewed. Viewing this on the physiological side, it is the succession of neural tremors, variously combining into neural groups." This evolution of all the forms of consciousness is experience, *i.e.*, "*organic registration of assimilated material.*" The psychoplasm then is "the mass of potential feeling derived from all the sensitive affections of the organism, not only of the individual but through heredity of the ancestral organisms. All sensations, perceptions, emotions, volitions are partly connate, partly acquired, partly the evolved products of the accumulated experiences of ancestors, and partly of the accumulated experiences of the individual, when each of these have left residua in the modifications of the structure."[1]

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[1] *Problems of Life and Mind*, vol. i., pp. 115-118.

This view of the origin of knowledge may perhaps be expressed somewhat more simply. The organism, it is held, is a combination of independent organs. But these organs act only in relation to the forces of the external world. Now we can distinguish, although we cannot separate, the structure of the organism from the function it discharges. Thus the organism, if we look only at its vital aspect, without directing our attention to its sensitive aspect, assimilates inorganic substances, or works them up into its own structure. But this process of assimilation has an influence on the structure itself, and hence an influence on the process of assimilation. The structure gradually changes, and so does the process; and so, as one living being gives rise to another, the changes in the structure of the organism of the parent give rise to a structure in the offspring different from that with which the parent began life. This gradual change in structure, and consequently in the function relative to structure, results in the course of innumerable generations in an organic structure and function very unlike the structure and function of the first animal of the series. Now from this we can see how experience is gradually evolved: how "the cosmos arises in consciousness." The nervous system is the special structure of which sentience is the function. Given a certain nervous structure, and a certain stimulus, and the product will be a certain impression or feeling. But the nervous structure is not always the same, but varies from generation to generation. The vital organism changes under the influence of its own reaction against the forces of the cosmical medium, and in course of time the organism is very much altered. And the nervous system, as part of the organism, of course changes along with the other organs. As therefore the general structure of the organism alters, so also does the special structure of the nervous system. That structure is adapted to receive external stimuli. But according to the state of the nervous structure at a given time will be the character of the reaction it manifests. And as the reaction of the nervous structure has an effect upon the nervous structure itself, the consequence is that it changes, and correspondently with it the feelings which are the product of the mutual action of the external stimuli and the nervous structure undergo modification. Now we can look at the nervous system either from the external or from the internal point of view. From the external point of view, we have neural tremors which combine to form neural groups; from the internal point of view we have feelings. But feelings are the "*sentient material*, out of which the forms of consciousness are evolved." And experience is a "registration of feeling;" hence the "cosmos which arises in consciousness" is a product of the organism in relation to the forces of the cosmical medium. As the structure of the nervous system changes, so do the feelings which are the product of its reaction. Hence each organism, inheriting the nervous structure of its ancestors, has an *a priori* part of knowledge transmitted to it, as well as an *a posteriori* part which it acquires for itself. For as the structure is relative to the function, change in the structure implies change in the experience. Coming therefore into the world with a special structure handed down as a legacy from the ceaseless action and reaction of medium and function, each organism inherits part of the garnered wealth of experience acquired by all preceding organisms. This explains why part of our knowledge seems, and in a sense, is, *a priori* or connate.

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[1] *Problems of Life and Mind*, vol. i., pp. 118-123.

One ought to be grateful to Mr. Lewes for expressing the doctrine of the evolution of experience in so definite a form. So long as it is simply asserted vaguely that the revolution in our biological conceptions caused by the acceptance of the Darwinian theory of development must compel us to give a new account of the nature of knowledge, it is difficult to resist the claim. But when we see the specific application of the biological notion of development to the explanation of knowledge, I think it becomes very manifest that there is nothing in the "new psychology" which really helps to settle the problem of knowledge as it was stated and partially solved by Kant.

On careful consideration it becomes plain that Mr. Lewes does not avoid that separation of intelligence and nature which he rightly regards as the essential weakness of the old empirical psychology, but simply brings it back in a new form. In fact, it is difficult to see how the continuous development of the whole animal world, should prove the evolution of the conscious from the unconscious, any more than the evolution of individual living men from human ancestors should prove it. Nor is there any reason why Kant, who saw nothing in the latter fact to throw doubt on his conclusions, should be overwhelmed by the former, supposing him to be alive now, and familiar with the recent developments of biology and psychology. For, whether the individual man is developed from human ancestors only, or finds his pedigree go back also to non-human ancestors, the conditions under which he comes to know a world of connected objects would seem to be very much the same. In the order of time, it is plain enough that unconscious processes precede conscious processes: that each man is at first a mere animal, with only potentialities of knowledge; but the clearest recognition of this fact is not inconsistent with the denial of the independence of the "cosmos" in intelligence. As, however, Mr. Lewes, and evolutionists generally, are of a different opinion, let us look at the matter more closely.

As we have seen, Mr. Lewes does not attempt in his "psychogenetic" theory to explain what is implied in the existence of living organisms, but assuming these to exist, he goes on to enquire into the way in which nature, or the cosmos, "arises in consciousness." The explanations he gives therefore concern, not the existence of living beings, but the process by which they are gradually changed or evolved. Each organism as living must be nourished by the assimilation of inorganic substances, and this assimilation is not a mere transference of those substances into the organism, but the working up of them into living substance. The organism is therefore an essential factor in the conversion of the inorganic into the organic; the internal medium is as essential to the final result as the external medium. Organic structure is built up by the forces of the cosmic medium co-operating with the organism as vital. And the differentiation of structure, resulting in the course of ages in the evolution of new types of organism, is the result of the continuous interaction of the organism and the external medium. The organic structure in relation to external forces is gradually modified by the function which that structure conditions. For the reaction of the organism on the forces of the cosmic medium leaves residua in the structure which alter it, and hence in each new phase of evolution there is a modification of structure, and therefore a modification of function. And this explains the way in which existing organisms are connected with the remotest organisms. The continuous accumulation of slight differences in the structure goes on *pari passu* with a continual change in the character of the functions which that structure conditions.

Now so far there is nothing to which Kant or his followers need object. It may be all very true, and very important in its place; but it does not seem to explain in any way how "the cosmos arises in consciousness." Aristotle has said what is virtually the same thing, although of course he did not suppose the ancestors of man to run further back than man. It is the next step that contains the peculiar doctrine of the psychology of evolution. There is one part of the organism, it is said, to which the mental life is related in a closer and more intimate way than to the organism as we have yet considered it—viz., the nervous system and the special organs connected with it; and the nervous system is only one of the differentiations of the organism. Now this of course is perfectly true; but at the same time it must be borne in mind that in framing a theory of the organism, we must take due note not only of the differentiations which occur, but of the unity which is differentiated. Now the organism regarded merely as vital, *i.e.*, as organic structure capable of assimilating inorganic substances, is a less concrete unity than the organism regarded as differentiated in a special nervous structure, with a correspondent function of sensation. Here too there is a relation between structure and the forces of the cosmic medium, but it is a relation of a different kind from that involved in nutrition. The organism has a structure fitting it for discharging the function of nutrition, but it has also a structure so differentiated as to fit it for responding to stimuli and discharging the function of sensibility. Thus in passing from the general structure which is the condition of nutrition, to the specific structure which is the condition of sensation, we must not only attend to the differentiation of the organism, but we must also realise clearly that the organism now connotes a new sum of relations. I refer to this, not for its own sake, but for its bearing on the general method by which Mr. Lewes endeavours to explain how "the cosmos arises in consciousness."

The organism, then, must now be regarded as connoting both the structure which conditions nutrition, and the structure which conditions sensation. And when we fix our attention on the structure of the nervous system, we find that the function which it, or rather the whole organism through it, discharges, has an effect on the structure of the nervous system itself. "Pathways" are established, which make the nervous system ready to respond "whenever the new excitation is discharged along the old channels." In other words, the response of the nervous system to an external stimulus becomes different by the fact of its responding, and as the nervous system is gradually modified, so also is the function, and hence the response is different. Function and structure being always relative to each other, we can understand how in the course of many generations organisms of an altered structure are generated, which respond differently to the same external stimuli.

This is what seems to be involved in Mr. Lewes' remarks on the "Psychoplasm," and to it Kant, I should say, would have made no special objection. There is nothing in it but an extension to the whole animal creation, not excluding man, of what was long held as to the connexion of animals of the same species. But evidently we have not yet got to the explanation of how "the cosmos arises in consciousness." For what is the response of a nerve under stimulation? Mr. Lewes himself tells us that it is a "neural tremor," and that neural tremors are "variously combined into neural groups." It must be observed, however, that Mr. Lewes now adds a new element, which he distinguishes and yet identifies with neural tremors and neural groups. For he holds that what is on the objective side "the succession of neural tremors variously combining into neural groups," is subjectively a "sentient material." This "sentient material" must be the product of the nervous structure as stimulated by the "forces of the cosmical medium": it must, in other words, be a succession of impressions.

It is unnecessary here to repeat what I have said as to the propriety of distinguishing the neural tremors as objective from the succession of impressions as subjective. But I shall ask the reader to observe, that the nervous structure is now regarded as the condition at once of neural tremors and of feelings, and that these must be distinguished from each other. And here we come to close quarters. It is easy to understand what is meant by a writer who tells us that "pathways" are established in the nervous structure by its excitations, and that this affects the structure itself, causing it to react differently on the same stimulus. But what is meant by saying that "the evolution of mind is the establishment of definite paths?" "Definite paths" in what? "Mind" is a term, as Mr. Lewes gives us to understand, connoting the purely sentient phenomena of the organism, *i.e.* it is a term expressing a combination of feelings. But feelings cannot have "definite paths" established in them in the same sense in which definite paths may be established in the nervous structure. When a writer speaks of such "paths," the metaphor suggests the transmission of an excitation along a nerve to the nerve centre, and in this sense the phrase has a perfectly intelligible meaning. But a succession of sensations is a series of transient feelings following each other in time, and it does not seem as if we could properly speak of the "establishment of definite paths" in connexion with them. If there are "paths" in feelings, what is it that goes along with the "paths?" A nerve, if we conceive of it as made up by atoms, may have a "definite path established in it," since the vibration which constitutes the excitation as produced by the external stimulus, will travel in a certain direction. But here it is the nervous structure which has the path, and the neural tremors are affections which each nerve-atom has in turn. Are we then to say that the sensation travels along the nerve-atoms? This can hardly be the case, because the sensation does not exist except when the nerve-vibration reaches the brain. There can be no doubt then, I think, that it is of the nervous structure Mr. Lewes is thinking when he speaks of "definite paths" being "established," and that, as applied to feelings in consciousness, the phrase has no proper meaning at all. Nevertheless, as we shall immediately see, the "psychogenetic" theory of knowledge owes its plausibility entirely to the transference to feelings in consciousness, of language which can properly be applied only to neural tremors.

We have seen then that the organism is differentiated as a nervous structure which has the function of nerve excitation. Now the transmission by heredity of a particular nerve structure, with its correspondent function, one can understand. But can there be a transmission of the *feelings* which are the products of the interaction of the nerve structure and the external stimuli? Mr. Lewes implies that there can. Let us see how he gives plausibility to the supposition.

The "sentient material" is spoken of as "forming the psychological medium." Now this "sentient material" may either mean (1) the nervous system as to its structure, or (2) the feeling which is the function correspondent to this special structure.

(1) As Mr. Lewes says that the sentient material forms the psychological *medium*, we naturally take his view to be that the nervous structure is the "medium" which determines the evolution of "the cosmos as it arises in consciousness." The whole tenor of his remarks is most consistent with this supposition. For if the sentient material is equivalent to the nervous structure, we can understand how it should gradually change under stimulation, and how by the influence of heredity, a nervous structure very different from what we might call the primary nervous structure should be "evolved." The "sentient material" on this interpretation will mean the nervous structure as the condition, or rather part-condition, of a sequence of feelings. By the "sentient material" therefore must be understood, not the "manifold of sense" of which Kant speaks—the flux of feelings coming and going perpetually—but the material structure, which for us is the condition of our having such a "manifold of sense." Taking the "sentient material" in this sense, there is a manifest propriety in speaking of the psychoplasm, which is but another name for the nervous system, as "incessantly fluctuating, incessantly renewed." It is "incessantly fluctuating, incessantly renewed," because it is only by perpetual repair of waste that it ministers to life, and because it is incessantly undergoing stimulation and reacting against the forces of the cosmical medium. And we can also understand, how by the influence of heredity, or rather by the exercise of its function of sensation, the organism should in the course of ages be greatly modified, and therefore be the condition of feelings different from those of which its former structure was the condition. All this is easily understood; but what

is not so easy to understand is how the "sentient material" so defined can be "the mass of potential feeling derived from all the sensitive affections of the organism, not only of the individual, but through heredity of the ancestral organisms." If the "sentient material" is equivalent to the nervous structure as part-condition of feeling, it cannot be a "mass of potential feeling;" it must differ from the "mass of potential feeling" as "condition of production" from "product," or "medium" from "function." If, therefore, Mr. Lewes is right in calling the "sentient material" the "medium," he is utterly wrong in calling it a "mass of potential feeling derived from all the sensitive affections of the organism." The nervous structure is not the feeling which it makes possible: while the one is co-relative to the other, they may not be identified, any more than matter can be identified with force. A centre is not a circumference although the one cannot be thought apart from the other.

(2) There is not the slightest doubt that Mr. Lewes does identify the "sentient material" out of which the cosmos is to arise with the nervous structure as internal "medium." But it is just as certain that he takes it in the sense of the Kantian "manifold of sense"—the succession of feelings which is the "product" of the interaction of internal and external media, *i.e.*, of nervous structure and external stimuli. Now taking the "sentient material," or "mass of potential feeling," in the sense of individual feelings, it is not easy to see how there can be any transmission or evolution of them. How can any one have another's feeling? When a feeling is experienced, it immediately gives place to another feeling, and it never returns. The same individual therefore cannot ever experience

the *same* feeling over again. And if this is true of each individual in regard to his own experience, it must be still more true in regard to that experience which is said to be "the evolved product of the accumulated experiences of ancestors." Feelings cannot be repeated and hence they cannot be transmitted. That there can be no evolution of feeling is also evident, since evolution implies identity in change: but in a mere series of feelings there is no identity and therefore no evolution. Mr. Lewes therefore when he says that experiences leave "residua in the modifications of the structure;" when he speaks of the "controlling effect of the established pathways," without which "every excitation would be indefinitely irradiated throughout the whole organism;" when he tells us of "the establishment of definite paths" by which mind is fitted "for the reception of definite impressions;" and when he refers to "registered modifications of feelings," by which feelings "must always be reproduced, whenever the new excitation is discharged along the old channels;" in all this he is speaking in language that is quite meaningless, unless he is thinking, not of the succession of feelings out of which experience is to be evolved, but of the nervous structure as the condition of such feelings. Certainly, the actual having of sensation, leaves "residua in the modifications of the structure;" but it does not leave residua in the sensations that are had. The nervous structure changes, and so, no doubt, does the sensation which is its "function" or "product;" but we can speak of sensations being modified, only when we mean to say that one sensation is not the same in content with another. So, when we hear of the controlling effect of the "established paths," we must suppose that the nervous structure as a condition of sensation is referred to, since there can be no "established paths" in a mere sequence of sensations. And when we are told that "feelings must always be reproduced whenever the new excitation is discharged along the old channels," we must suppose Mr. Lewes to mean that a feeling similar in content with another formerly felt, is felt whenever the nervous system is stimulated in the same way. But all this only shows that, in identifying the "sentient material" with the mere sequence of feelings, Mr. Lewes must give up his view of the transmission of the "sentient material." What is really transmitted is the structure, modified by the exercise of its function, and so responding in a different way to stimuli. But no modification of the nervous structure will account for the origin of the cosmos in consciousness. We may explain in this way how the "sentient material"—the manifold of sense—alters, but we have not shown how experience *develops* because we have not shown how it *begins*. Something cannot be developed out of nothing, experience out of non-experience. The changes in the nervous system, gradually produced by the accumulated activity of innumerable individuals lineally connected, and the corresponding change in the products, does not account for the origin of the cosmos in consciousness, because it does not account for the very simplest experience, the experience that there is something known by me. Thus whether we take the "sentient material," as (1) the nervous structure conceived of as the part-condition of feeling, or as (2) the feelings of which the nervous structure is the condition or medium; in either case we are no nearer an explanation of knowledge than when we began.

Mr. Lewes has, therefore, in order to make plausible the derivation of the knowable world from the changes of the organism, to make a further unwarrantable identification—the identification of a series of feelings with the consciousness of a world of connected facts. Just as the nervous structure is confused with the sensation which is its function, so a series of feelings is confused with the consciousness of such feelings, *i.e.*, with the relation of real objects to the unity of self-consciousness. The "sentient material" or "mass of potential feeling" is that "out of which all the forms of consciousness are developed;" but on the other hand experience is called "the organic registration of assimilated material." Now it is true that out of the "manifold of sense," not as a mere manifold but as the particular element in knowledge reflected on the universal, "all the forms of consciousness are developed." Our knowledge undoubtedly comes to us in fragments, and these fragments we may call the "sentient material" of knowledge. But observe that this "sentient material" is not a mere feeling as it is for a being that has no self, but the reflection of something real on the self. As universal, real knowledge does not begin in mere sensation but in sensation informed by thought. Sensation is an immediate feeling, passing with the moment; knowledge even in its simplest phase implies the judgment that "something is." Hence if we call experience the "registration of assimilated material," we must understand it to be a registration which implies the reference of the material assimilated, *i.e.*, the feeling, to a universal self. Mr. Lewes, however, supposes that the registration is somehow an organic process, and hence that experience develops by the gradual alteration in the nervous structure as medium, and the consequent alteration in the "sentient material." As, however, the organism as having a succession of feelings must be taken to connote less than the organism as self-conscious, the evolution of the organism in the one sense does not imply its evolution in the other sense. Experience cannot possibly evolve before it begins, and it only begins when the mere succession of feelings is converted into a system of real objects. Thus the cosmos does not arise in consciousness from the interaction of nervous structure and external stimuli, but only from the gradual evolution of intelligence in relation to the objects which it makes possible. And if feelings cannot be transmitted, much less can self-consciousness. An organic structure as gradually altered by successive stimulations, and responses to stimulations, is inherited; but experience is nothing apart from self-consciousness, and self-consciousness is not handed down from one being to another. When Mr. Lewes talks of knowledge being *a priori*, he confuses the organic conditions of our having sensation with the experience of sensations as objects. Such experience is nothing for us as thinking beings; it is but the potentiality of our having knowledge; and, unless there were a universal self distinct from the nervous structure and the succession of feelings, the knowledge of the cosmos would never arise in consciousness at all. External forces as stimuli, and the nervous structure as reacting on stimuli, are nothing for consciousness but a mere "manifold of sense" unless we suppose the self as synthetic to relate that manifold to itself, and so to give rise to a known world. But as the mere manifold, as Kant has shown, is not an object of knowledge, but only an element in knowledge, it is not possible to show that self-consciousness is evolved from that which only exists in relation to self-consciousness. Abstract from intelligence itself, and therefore from all relation to intelligence, and the world becomes a mere "unknowable." The supposition that Kant's theory of knowledge is affected by the recent advances in biology and psychology arises from a confusion between the transmission of a modified organism, and the transmission of experience. The organism is indeed transmitted, but experience is not transmitted: it is appropriated in virtue of intelligence.

In the above remarks I have gone somewhat beyond the letter of Kant's system, but I do not think that I have said anything inconsistent with its spirit. The essential point is the necessary correlativity of consciousness and its objects, a correlativity such that the object must be carried over into consciousness and not consciousness into the object. It is the recognition of this essential unity of all known objects in intelligence that constitutes the peculiar merit of Kant, and makes the publication of the *Critique* an epoch in modern speculation.

CHAPTER V.

THE PRINCIPLES OF JUDGMENT. DR. STIRLING'S INTERPRETATION.

STILL following the lead of formal logic, Kant, after considering the pure conceptions, goes on to consider the pure judgments of the understanding, or the fundamental propositions which formulate the unity of individual objects and the unity of their mutual connection. These judgments or propositions embody the last result of the investigation into the problem of critical philosophy in its positive aspect, viz.: How are synthetic judgments *a priori* possible? The materials for the final answer have already been given in the *Æsthetic*, taken along with the deduction and schematism of the categories, and little remains except to show in detail how the elements implied in real knowledge are joined together in a system constituting the known world. Kant, however, after his manner, goes over the old ground again, and shows, but now more in detail, on the one hand that the opposition of intelligence and nature, from which the dogmatist starts, cannot explain the actual facts of our knowledge; and, on the other hand, that these facts may be explained if we recognize the constructive power of intelligence in nature. By a roundabout road he has come back to the problem, Hume's statement of which "roused him from his dogmatic slumber," but he has come back enriched with the spoils of a large conquest of new territory. Not only has the single question as to the application to real objects of the law of causality expanded into the comprehensive question as to the fundamental laws of nature as a whole, but the point of view from which the relations of intelligence and nature are contemplated has been completely changed. Philosophy no longer perplexes itself with the irrational problem, How do we come to know objects existing as they are known beyond the confines of our knowledge? but occupies itself with the rational and soluble problem as to the elements involved in our knowledge of objects standing in the closest relations to our intelligence.

Even in our ordinary consciousness, in which we do not think of questioning the independent reality of the world as we know it, we draw a rough distinction between objects immediately perceived, and the relations connecting them with each other. Things, with their distinctive properties, seem to lie spread out before us in space, and by simply opening our eyes we apparently apprehend them as they are. On the other hand we regard these objects as continuing to exist even when we do not perceive them, and as acting and reacting upon each other. Thus, although in an unreflective or half-unconscious way, we draw a distinction in our ordinary every-day consciousness between individual objects and their relation to one another. Moreover, the separate parts of individual objects and the degrees of intensity they display we also recognize, and we count and measure them. Corresponding to this broad distinction between objects and their relations, we have respectively the mathematical and physical sciences.

Mathematics, abstracting, in the first instance, from objects in space and time, fixes upon the relations of space and time themselves, and after dealing with these abstractions, it goes on to apply the results thus reached to individual objects. The physical sciences, borrowing from mathematics its results, proceed to inquire into the connections of objects with each other. Thus, mathematics and physics deal respectively with the spatial and temporal relations of individual objects, and with their dynamical relations. It is at this point that critical philosophy begins its task. In the science of mathematics, on the one hand, and in the physical sciences, on the other hand, our knowledge of nature is systematized; and the problem of philosophy is to show what are the essential conditions of such systematic knowledge. Assuming the results of mathematics and physics to be true, the question still remains, whether nature, regarded either as a complex of individual objects, or as a system of laws, is independent of the activity of thought. This problem neither of those sciences has taken any notice of. The mathematician goes on making his ideal constructions without for a moment questioning the necessary truth of the conclusions he reaches, and therefore without attempting to show from the nature of knowledge how we can know them to be true. The physicist assumes that matter is real, and that it is endowed with forces of attraction and repulsion, expressible in mathematical symbols, but it is no part of his task to justify that assumption. But philosophy, aiming to explain the inner nature of knowledge, cannot evade the double problem: first, what justifies the supposition that mathematical propositions are necessarily true, and are applicable to the individual objects we perceive? and, secondly, what justifies us in assuming that there are real substances, real connections, and real coexistences? Now, looking more particularly at the nature of that which is known in relation to knowledge, we may further divide the known world as perceived into concrete objects and the spatial and temporal determinations of such objects. We may, in other words, ask what is implied in the ordinary experience of individual things, and in the fact that we can count or measure them; as well as what is implied in the scientific application of quantity to such objects, and in the rules of quantity considered by themselves. As a complete theory of knowledge must explain the possibility of the various kinds of knowledge which we undoubtedly possess, it must be shown how we come to know individual objects, and to apply quantitative relations to them. Philosophy has therefore at once to justify the universality and necessity of mathematical propositions, and to explain by what right mathematics is applied to individual things. The possibility of mathematics, regarded simply as a science determining the relations of space and time, has been explained in the *Æsthetic*, where it was pointed out that space and time are *a priori* forms of perception. The general result of the *Æsthetic* was to show (1) that the demonstrative character of mathematical judgments arises from the fact that these rest upon specifications of the forms of space and time, which belong to the constitution of our perceptive faculty, and (2) that mathematical judgments are not mere analyses of pre-existing conceptions of numbers, figures, etc., but are synthetical judgments resting upon the active construction of numbers and figures themselves. But the elements of knowledge implied in mathematical propositions, and in their application to individual objects, can only now be completely set forth. For in these there are implied, not only the forms of space and time, but certain pure conceptions or categories. It should be observed that the question as to the application of mathematics has nothing to do with our reasons for determining special objects by mathematical formulæ; we are not asking, for example, how we can determine the distance of the sun from the earth, but simply how we are entitled to apply the category of quantity to any object whatever in space. In answering this question, philosophy abstracts in the meantime from the actual relations of things to each other, as well as from the concrete properties of things, and from the specific determinations of space and time. It has to point out what is implied in the knowledge of any individual object of perception; but it does not seek to determine what are the specific differences of objects. These differences may be summarily expressed by the term "manifold," and as this manifold involves a relation to our perceptive faculty, it may be called the "manifold of sense." The meaning of the term "manifold" therefore varies, according as we are referring to the properties of individual things, to their spatial and temporal relations, or to the determinations of space and time themselves. In considering the principles which justify the application of mathematics to phenomena, Kant uses the term in all these senses, but in no case does he mean by it more than what may be called isolated points of perception, that is, mere differences taken in abstraction from their unity. From the point of view, then, of the Critical philosophy, the objects of perception are not real external objects, but merely the sensible, spatial or temporal parts out of which objects are put together. The manifold, *e.g.*, of a house is the spatial parts or the sensible units which together make it an object, and mark it out in space; the manifold of a line is the parts or points, by the successive construction of which the line is determined. This mere manifold, which is really only an abstract element in known objects, is all that is due to perception; the unity of the manifold is contributed entirely by the understanding.

Turning now to the relations of objects, as distinguished from objects themselves, we can see that our problem is somewhat changed. So far we have supposed real things to be known; now we must inquire what justification there is for that assumption. Granting that we can prove all objects in space and time to have extensive and intensive quantity, we must still ask on what ground we affirm that there are real substances, real sequences, and real coexistences. There can be no doubt that, in our ordinary consciousness, we have the conceptions of substance, cause, and reciprocity; but philosophy must be able to show that these conceptions have an application to real objects. Our question, then, is as to the possibility of ultimate rules or principles of judgment, which are at the same time fundamental laws of nature. In those universal principles, which the scientific man assumes in all his investigations, and which form the prolegomena to scientific treatises, we have indeed a body of universal truths; but they are limited in their application to external nature. Our aim is, on the other hand, to discover and prove the objective validity of the principles which underlie nature in general, as including both external and internal objects; or, what is the same thing, to show that there are synthetical judgments belonging to the constitution of our intelligence, which account, and alone account, for the existence and connection of real objects.

In accordance with the distinction of individual objects and the relations of individual objects, the principles of judgment naturally separate into two groups, which we may distinguish respectively as the *mathematical* and the *dynamical* principles. Following the clue of the categories, we find that these groups again subdivide into two sets of propositions. Mathematical principles prove (1) that individual perceptions, whether these are simple determinations of space and time, or concrete objects, are extensive *quanta*, and (2) that in their content individual objects have intensive quantity or degree. In the dynamical principles it is shown (1) that there are real substances, real sequences, and real coexistences, and (2) that the subjective criteria of knowledge are the possibility, the actuality, or the necessity of the objects existing in our consciousness.

From what has been said, it will be easily understood why Kant divides the principles of judgment into two classes, the mathematical and the dynamical. The former are not mathematical propositions, but philosophical propositions, formulating the process by which the axioms and definitions of mathematics are known and applied to concrete objects. For the method of philosophy is quite distinct from the method of mathematics. The mathematician immediately constructs the lines, points, and figures with which his science deals, and only in that construction does he obtain a conception of them. The proposition that a straight line is the shortest distance between two points, is not obtained by the analysis of the conception of a straight line, but from the actual construction of it as an individual perception. The axioms and definitions of mathematics are, therefore, immediately verified in the perception or contemplation of the objects to which they refer. Philosophy, on the other hand, must show how there can be conceptions which yet apply to perceptions; how, for example, we are justified in saying that there is a real connection between events. Any direct reference to immediate perception is here inadmissible, for from such perception no universal proposition can be derived. The two principles that "all perceptions are extensive *quanta*," and that "the real in all phenomena has intensive quantity or degree," are called mathematical, because they justify the assumption that the axioms and definitions of mathematics are necessary, and at the same time, because they account for the application of mathematics to individual things. As to the first point, the axioms in mathematics rest upon the immediate perception of the object constructed by the determination of space and time. And while the necessary truth of such axioms admits of no doubt, philosophy, having undertaken the task of showing the relation of intelligence to all its objects, must be able to point out what in the constitution of intelligence gives them their binding force. The axioms of perception therefore, express in the form of a proposition the supreme condition under which mathematical axioms stand; showing that unless the mind, in constructing the pure perceptions on which those axioms rest, possessed the function or category of quantity, there could be no necessity in a mathematical proposition. "Even the judgments of pure mathematics in their simplest axioms are not exempt from this condition [the condition that synthetical judgments stand under a pure conception of the understanding]. The principle that a straight line is the shortest distance between two points, presupposes that the line is subsumed under the conception of quantity, which certainly is no mere perception, but has its seat in the understanding alone."[1] Besides showing the possibility of mathematical propositions, the axioms of perception and anticipations of observation justify the application of mathematics to known objects. A complete theory of knowledge must evidently explain why the ideal constructions of the mathematician hold good of actual objects in the real world, for the propositions of mathematics might be true in themselves, and yet might have only the coherence of a well-arranged system of fictions. In showing how there can be a knowledge of the laws of nature, we must, therefore, explain what justifies the scientific man in making free use of the conclusions of mathematics. Now there is a distinction between the way in which we establish the mathematical and that in which we establish the dynamical principles. In both cases we have to show that the pure conceptions of the understanding apply to real objects. But, in the case of the mathematical principles, we deal directly with individual objects as immediately presented to us, without making any inquiry into the connection of these objects with each other, or into their relations to a knowing subject. This is the reason why the categories of quantity and quality, unlike those of relation and modality, have no correlates. Taking individual perceptions just as they stand, without seeking for any law binding them together, we necessarily exclude all relation. To prove the mathematical principles, we must show that they rest upon, and presuppose, the categories of quantity and quality; but this we can do simply from the contemplation of the immediate determinations of space and time; and hence the evidence for them may be said to be direct or intuitive. And as these principles, in referring to immediate unrelated objects of perception, show how the parts of the object are put together, they may be called *constitutive*, in distinction from the dynamical principles, which, as binding together concrete objects already constituted as concrete, may properly be called *regulative*. Every object of perception must conform to the mathematical principles, since these show what are the essential conditions without which there could be no individual objects for us. The dynamical principles, again, are not principles of dynamics, such as Newton's three laws of motion; for these, while they are necessarily true, do not reach the universality of principles of judgment, but apply only to corporeal existences. The dynamical principles are so called because they express the ultimate conditions, without which there could be no science of nature at all. The analogies and postulates are dynamical, because they show how we can account for the relations of objects to each other, or to the subject knowing them. Thus, when it is said that matter has repulsive and attractive forces, it is evidently presupposed that one material object acts upon another, and hence that there is a causal connection between them. The justification of this assumption of real connection is the task of philosophy. Now, this cannot be done by directly bringing the immediate objects of perception under the categories of relation and modality. For the dynamical principles do not hold good of perceptions simply as such, but involve the connection or relation of such perceptions. Hence they cannot, like mathematical principles be, directly proved. The mere fact that individual objects, to be known at all, must be known as in space and time, shows that they must conform to the nature of space and time, and must therefore admit of the application of mathematical formulæ to them; but it does not show that they must be connected with each other. Hence, in the proof of the dynamical principles, it is necessary to show that real objects are something more than immediate perceptions, that real events cannot be immediately apprehended, and that the coexistence of real objects is not accounted for, if we suppose them to be directly perceived or contemplated. The real existence therefore of known objects, which it was not necessary to inquire into in the proof of the mathematical principles, comes directly to the front in the investigation of the reality and connection of objects.[1]

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[1] *Prolegomena*, tr., § 20, p. 75.

The first step toward a full comprehension of the Principles of Judgment is to realize with perfect clearness that Kant does not, in the fashion of a dogmatic philosopher, separate absolutely between nature and intelligence, things and thoughts, sense and understanding. Unless we put ourselves at the right point of view, and make perfectly clear to ourselves the necessary relativity of the known world and the world of knowledge, the reasoning of Kant must seem weak, irrelevant, and inconclusive. That Dr. Stirling has not done so seems to me plain from the fact that he supposes those principles to be abstract rules, which are externally applied to knowledge independently supplied by the senses. The net result of the *Æsthetic*, as I understand Dr. Stirling to say, is, that space and time, together with the objects contained in them, are not realities without, but ideas within. And from the *Analytic*, taken in conjunction with the *Æsthetic*, we further learn that sense gives us a knowledge of individual facts or objects, but only in the arbitrary order of a mere succession in time; while the understanding brings those facts or objects under the categories, and so makes necessary or objective what before was merely arbitrary or subjective. On the one side, therefore, we have the "manifold of sense," a term which is applied not to "a simple presentation alone, but even to such compound presentations as the phenomena in any case of causalty;"[1] on the other side we have the rule of judgment, under which the manifold is subsumed. And Dr. Stirling objects, with manifest force and conclusiveness, that this account of the relations of sense and understanding is untrue, and the proofs of the various principles utterly inconclusive, since no rule of judgment could possibly make any succession of perceptions necessary, unless there were already necessity in the perceptions themselves.

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[1] *Kritik*, pp, 154-5, 477 ff., 103, 166-8, 191, 369. *Prolegomena*, §§ 25-26.

I accept unreservedly this criticism of Kant's theory, as interpreted by Dr. Stirling. If sense gives us a knowledge of real objects, facts, or events, it is perfectly superfluous, and worse than superfluous, to bring in the faculty of thought to do that which has been done already. First to attribute knowledge to one faculty, and then to introduce a new faculty to explain it over again, is sure evidence of the failure of a philosophical theory to accomplish the end for which it was designed. But I cannot believe Kant to have blundered in this fashion. The vigorous blows which Dr. Stirling believes himself to be showering upon Kant, really fall only upon a simulacrum which he has fashioned for himself out of Kant's words read in a wrong sense. It is as well at least that it should be distinctly understood that, in accepting Dr. Stirling's *interpretation* of Kant's theory of knowledge, we at the same time commit ourselves to his radical *condemnation* of it. For my own part, I must decline to follow Dr. Stirling either in his interpretation or in his condemnation.

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[1] *Journal of Speculative Philosophy*, xiv. 76.

It is not, as I venture to think, a fair representation of the *Æsthetic* to say that it merely makes space and time, and the objects in them, ideas within the mind, instead of actual realities without the mind. I find it difficult to attach a precise meaning to such language as, that "we know an actual outer space, an actual outer time, and actual outer objects, all of which are . . . things in themselves, and very fairly perceived by us in their own qualities."[1] This may mean that space and time, together with individual objects and events, are completely independent in their own nature of all relation to intelligence. It may be, in short, an acceptance of the common-sense realism which one is accustomed to associate with the name of Dr. Reid. In that case, I prefer Kant to Dr. Stirling. But if the meaning is, as I am fain to think, that space, time, and concrete things are not dependent for their reality upon *us*, although they are relative to intelligence, I do not understand why Kant should be so strongly rebuked for making space and time forms of perception instead of sensible things. One may surely reject the subjectivity of space and time, and yet see in the *Æsthetic* a great advance on previous systems. A theory may have in it an alloy that lessens its absolute value, and may yet contain a good deal of genuine gold. Kant's view of space and time, were it only for the necessity it lays upon us of conceiving the problem of knowledge from an entirely new point of view, and of seeking for a theory truer than itself, possesses an importance difficult to over-estimate. I do not see how any one who has undergone the revolution in his ordinary way of thinking, which the critical philosophy, when thoroughly assimilated, inevitably effects, can any longer be contented simply to announce that space and time are realities, without feeling himself called upon to explain at the same time what relation they bear to intelligence. Ordinary Realism, and its offspring, psychological Idealism, have received their death-blow at Kant's hands, and no attempt to resuscitate them can be of any avail. Kant himself, at least, was firmly convinced that, in maintaining space and time to be forms of our intelligence on its perceptive side, he was initiating a reform of supreme importance in philosophy. Dr. Stirling speaks of Kant's doctrine of the external world exactly as if it were identical with the sensationalism of such thinkers as Mr. Huxley and Mr. Spencer. But it is surely one thing to say that space and time are given to us in feelings set up in us by an object lying beyond consciousness, and another thing to say that they belong to the very constitution of our intelligence in so far as it is perceptive. If space and time are forms of perception, we can no longer go on asking how a world of objects lying beyond the mind gets, in some mysterious way, into the mind. Kant never, in his philosophical theory, makes any attempt to prove the special facts of our ordinary knowledge, or the special laws of the natural sciences; these he simply assumes as data which it is no business of his to establish. But, although he leaves the concrete world just as it was before, he does not leave the philosophical theory commonly put forward to explain it just as it was. From the critical point of view, things can no longer be regarded as unintelligible abstractions, as they must be in any theory which, by extruding them from the inner circle of knowledge, virtually makes them unknowable; being brought into relation with our intelligence, there is no barrier to their being known and comprehended. I cannot see that it is doing Kant justice simply to say that space and time, and the objects filling them, which before were without the mind, are by him brought within the mind. He certainly holds them to be "within," but they are within, not as transient feelings, but as permanent and unchangeable constituents of knowledge, belonging to the very nature of *human* intelligence. Omit the "human," and we have a view of the external world, which is consistent with its reality, in the only intelligible meaning of the term, and which yet denies space and time to be subjective any more than objective. Kant here, as always, is greater than he was himself aware of, and that seems to me criticism of a very unsympathetic and uninstructive sort which closely scans the mere outward form of his theory, and fails to see behind the form an idea rich in suggestiveness and far-reaching in its issues.

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[1] *Journ. Spec. Phil.*, xiii. 11.

Dr. Stirling's appreciation of the *Æsthetic* seems to me to be inadequate; his view of the relations of sense and understanding, as expounded in the *Analytic*, I regard as a complete inversion of the truth. The objects of sense fall completely apart from the forms of thought. A broad distinction is drawn between perceptions and judgments about perceptions, and sense is supposed to have completed its work before thought begins to operate. The *Critique* we must, therefore, regard as a phenomenology, tracing the successive phases through which our knowledge passes on its way to necessary truth. All our knowledge is at first simply an immediate apprehension of special facts, coming to us without order or connection; and only afterwards, when thought brings into play its schematized categories, is necessity imposed upon our perceptions. I maintain, on the contrary, that sense does not give a knowledge of individual objects, facts, or events; that of itself it gives us no knowledge whatever; and that understanding does not externally impose necessity upon perceptions, but is essential to the actual constitution of known objects, facts, or events. The *Critique* I therefore regard, not as a phenomenology, but as a metaphysic, *i.e.*, as a systematic account of the logically distinguishable, but not the less real, elements that together make up our knowledge in its completeness. The importance of the issue at stake may perhaps excuse the repetition of some points I have already tried to explain.

The *Critique* may almost be said to part into two independent halves, in the first of which Kant speaks from the ordinary or uncritical point of view, and in the second of which he advances to the critical, or purely philosophical point of view. This implicit division arises partly from the fact that, as Kant never attempts to prove a single qualitative fact or special law of nature, in referring to the data which he has to explain he naturally speaks in the language of everyday life, and, therefore, seems to be accepting the common-sense view of things; but it partly arises also from his accepting the account of the process of knowledge given in formal logic as true outside of the sphere of philosophy proper. According to the ordinary conception of our knowledge of things, sense immediately reveals to us actual objects lying outside of our consciousness, and passively taken up into it. In speaking of the facts demanding philosophical explanation, Kant does not, as he might have done, deny this assumption at the very threshold of his inquiry, but seeks gradually to undermine it by showing the conclusions to which it leads. Moreover, Kant's own theory of knowledge harmonizes with the ordinary view in these two points; (1) that sense or feeling supplies to us all the concrete element in our knowledge of external objects, and (2) that it also reveals to us the particular feelings belonging to ourselves as individuals. Notwithstanding this partial agreement, however, the divergence of criticism and dogmatism is radical and complete. For it is one thing to say that sense contributes the concrete *element* in knowledge, and quite a different thing to say that it gives us a knowledge of concrete *objects*. The latter statement is only true of sense, understood in the loose and popular meaning of the term, as when we speak of "sensible objects," or the "world of sense." Taken simply as an expression of the *fact* that we have a knowledge of external objects, and that, as it seems, by immediate apprehension of them, such language may be allowed to pass; but, in the philosophical meaning of the term, sense is a name for the particular, not for the individual. This follows directly from Kant's conception of space and time as forms of perception, not realities perceived. So long as these forms were supposed to be actual realities existing in themselves, apart from any relation to us, it seemed correct enough to say that by sense we directly receive into our minds at once individual objects, and the space and time in which they are contained. But, if space and time are not realities without our consciousness, but potential forms coming into existence for consciousness on occasion of knowledge, it is evident that our view of the relation of objects to knowledge must be radically changed, and therefore our view of that which belongs to sense as distinguished from thought. Things which exist beyond our consciousness cannot be contained in space and time, which exist only within consciousness. The distinction of the inner from the outer world is no longer a distinction of ideas within the mind, from material or actual realities without the mind; internal feelings and external objects are alike within consciousness, being logically distinguishable, but not really separable. The contrast of internal and external objects arises, so far as sense is concerned, from the fact that external objects are informed by space as well as by time, while our internal life passes in time alone; but otherwise our perceptions, and what we know as objects of perception, are composed of the same elements. Knowledge always comes to us in successive apprehensions; and this is true, whether we look at our feelings as in time, or at known objects as in space. Now, as sense is the faculty by which we immediately contemplate the particular taken by itself, it contributes a mere "manifold," which is not yet an individual object, but only the sensuous material for such an object. On the internal side we have a series of feelings, perpetually coming and going, and, therefore, destitute of universality, unity, or connection. Isolate this mere series, as the dogmatist does, from objects in space, and these feelings are not knowable even as a series. On the other hand, separate the external from the internal, and the former becomes unknowable and unintelligible. This is the sum of the *Refutation of Idealism.* Sense, therefore, while it contributes the particulars implied in our actual knowledge of objects, cannot of itself give us any knowledge whatever. We might as well claim that, from the mere form of space or time, we can know definite objects, as hold that the special senses reveal to us concrete things. The dogmatist makes the problem of knowledge very easy for himself by assuming that we immediately apprehend actual objects; the *actuality* he assumes, and the *knowledge* of actuality he figures to himself as a direct glance of sense. But now that sense is seen to be capable of supplying only a series of unconnected particulars, a new mode of explanation must be adopted. The actuality of things must be explained, and not simply assumed; and the manner in which the mere particularity of sense becomes for us the knowledge of individual objects must be shown. The individuality of things, so far as sense is concerned, vanishes with their supposed independence of our intelligence, and we are left by the progress of philosophical reflection, with a mere "manifold of sense," an unconnected congeries of particulars, entirely destitute of unity, connection, or system. To explain our actual knowledge of objects and of their connections with each other, we require to produce the universal element belonging to our intelligence, by the action of which on the particulars of sense real knowledge takes place. We have discovered the faculty of differences; we must now show what is the faculty of unity, and how it produces the various kinds of unity which we can see to be implied in our actual knowledge.

It will be evident from what has been said, how Dr. Stirling has been led to suppose that Kant regards sense as giving us a knowledge of individual objects or facts. Unless we resolutely keep before our minds the fact that the *Critique* is an analysis of the logical constituents of our actual knowledge, and not an account of the temporal stages by which the individual and the race advance to knowledge of the highest kind, we shall inevitably confuse the popular with the critical point of view. When he is leading up to his own theory, and simply stating the facts he has to explain, or when he is criticizing the dogmatic theory of his predecessors, Kant naturally speaks as if sense immediately reveals to us special objects or events. From the philosophical point of view, however, sense he conceives of as the faculty which supplies to us the isolated differences which thought puts together and unites into individual objects or connections of objects. The "manifold of sense" is, therefore, simply that element in knowledge which supplies the particular differences of known objects. And these differences, of course, vary with the special aspect of the known world which at the time is sought to be explained. In the Axioms of Perception, for example, in which Kant is seeking to show that individual objects in space and time are necessarily extensive *quanta*, the special fact of knowledge to be explained is the apprehension of objects as made up of parts forming individual aggregates. These parts Kant regards as directly perceived or contemplated. The "manifold" may be the parts of a line, the parts of any geometrical figure, or even particular figures regarded as constituents of more complex perceptions; or, again, it may be the parts of individual objects in space. But in all of these cases the particulars, as due to sense, are, when taken by themselves, mere abstractions; they are, in fact, not even known *as* particulars apart from the synthetic activity of imagination, as guided by the category of quantity. To have a knowledge of the parts of a line, or the parts of a house, as parts, is to know at the same time the combination of those parts. But the combination takes place for us only through the act by which we successively determine space to particular parts, and in that determination combine them. Thus, in the knowledge of the line, there are implied both the particular element of sense and the universal element of thought. We do not *first* perceive the line and *then* apply the category, but, *in* perceiving the line, we apply the category. And as in all recognition of objects in space we necessarily determine the particulars of sense through the schema, as silently guided by the category, we may express this condition of our knowledge in the proposition, "All percepts are extensive *quanta*." This proposition, therefore, rests upon a discrimination of the elements which we are compelled to distinguish in explaining how we know any individual object to be a unity of parts; it is not a proposition which we acquire by reflection *before* we know objects to be extensive *quanta*. Observing that all external objects which we can possibly know must be in space, and having seen space to be a necessary form of thought, we can say axiomatically that *every* precept is an extensive *quantum;* but this proposition is not one which *precedes* the knowledge of objects as *quanta*, but one which is required to explain the fact of such knowledge. On Dr. Stirling's view, sense gives us a knowledge of individual objects as extended, and thought "varnishes" this knowledge with necessity.[1] How Kant could possibly suppose sense to give us the perception of things in space, without at the same time determining these as extensive *quanta*, I am unable to understand. But, in truth, Kant makes no such supposition; what he holds is that spatial objects are known as extensive *quanta* in the act by which the productive imagination determines their parts successively, under control of the category of quantity. The necessity is implied in our actual knowledge, and philosophical reflection merely shows it to be there.

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[1] *Journ. Spec. Phil.*, xiv. 103.

The "manifold," again, assumes a different aspect when Kant goes on to deal with the dynamical principles. Here the question is no longer in regard to the quantitative parts of external objects, but in regard to the philosophical justification of the permanence, the causal connection, and the mutual influence of these objects. In our ordinary and scientific knowledge we take it for granted that we know real objects, which do not pass away with the moment, but persist or are permanent. Permanence, in fact, is the mark by which we ordinarily distinguish actual existences from passing feelings or creations of the imagination. To show philosophically how this assumption is justified from the nature of our intelligence is the object of the First Analogy of Experience. Now, the ordinary explanation of the permanence or actuality of an external object is, that we simply see, apprehend, or observe the object, and immediately know it to be permanent. But the consequence of this assumption, as the psychological Idealist has seen, is that the actual object itself is not apprehended or perceived at all. So far as the theory can show, we have indeed a consciousness of ideas or feelings supposed to represent actual objects, but we do not really come in contact with those objects themselves. Kant, taking up the problem at this stage, points out what is really implied in a series of feelings or ideas, and from this he shows the necessity of the action of thought on sense for the knowledge of actual objects as permanent. The "manifold" here is individual objects regarded simply as revealed in the direct glance of sense. If we immediately apprehend or perceive objects which are permanent, we cannot have more before us than separate percepts, coming the one after the other. I open my eyes and see a house; I move my eyes and see a tree, then a mountain, etc.; but I cannot, as is usually supposed, see the house, tree, mountain, etc., to be permanent substances. At each successive moment a fresh presentation of sense comes before me; and, as immediate apprehension does not go beyond the moment, I can say nothing about objects when they are not actually present. Thus, the ordinary explanation of the permanence of things really reduces actual objects to successive affections or feelings, coming and going like the phantasms of a dream. They are a mere "manifold of sense," a number of unrelated feelings, really incapable of revealing to us any actual or permanent thing. The true explanation of the fact that we have a knowledge of permanent external things or substances must bring in an element quite distinct from sense, and this is the element of thought. The mere isolated particulars of sense never could give us a knowledge of actual objects; only thought in conjunction with the manifold of sense can do so. Kant, then, does not hold, as Dr. Stirling supposes, that sense first gives us a knowledge of actual things, while thought comes after and makes this special knowledge universal and necessary. On the contrary, he argues that if we are to explain the actual fact that we do have a knowledge of permanent things, we must *not* say that sense gives us a knowledge of real substances, but, on the contrary, that it supplies only the particular differences of things, leaving to thought, in conjunction with the imagination, the combination or unification of those differences. Kant simply shows, by an inquiry into the mental conditions, without which a given kind of knowledge would be impossible, what are the logically distinguishable elements in that knowledge; and to convert such purely metaphysical distinctions into temporal phases in the development of our knowledge is to turn his theory upside down.

A proper comprehension of the way in which criticism transforms the dogmatic or psychological conception of the nature of sense makes the corresponding transformation of the ordinary view of the nature of thought easily intelligible. As sense supplies the particular element in knowledge, so thought reduces the particular to unity. From the dogmatic point of view judgment is always a process of analysis. Kant does not deny that analytical judgments are valuable within their own sphere, but he denies that they in any way enable us to solve the problem of philosophy. For such judgments, valuable as they are in bringing clearly before our minds what we already know in an obscure and half-unconscious way, cannot explain the process by which we obtain a knowledge of actual things and their connections. The analysis of such pure conceptions as substance and cause can never establish the application of these conceptions to real objects, but only brings out explicitly what we mean when we speak of substances or causes. Analytical judgments thus fall outside of the domain of philosophy proper. They rest upon the purely formal principle of contradiction. If we but express in the predicate what is implied in the subject, and do not attach to the subject a predicate inconsistent with it, we conform to the only condition demanded by the analytic judgment. The affirmative proposition, "body is extended," satisfies this condition, since "extension" is an attribute implied in the conception of "body;" the negative proposition, "body is not immaterial," satisfies it equally, since it merely excludes from the conception of body an attribute contradictory of it. We can thus see wherein the essential vice of the dogmatic theory of judgment consists. The dogmatist supposes we may establish the objective application of a conception by simply showing that a given judgment is not self-contradictory. Wolff, *e.g.*, thought he could prove the conception of causality to be true of real things, because that conception, when analysed, yields the judgment, "Whatever is contingent has a cause." But the judgment is purely analytical, only expressing explicitly what is implicit in the conception of the "contingent." How, then, are we to account for the application of conceptions to real things? How, in other words, can we show that there are judgments which are synthetical, and yet rest upon conceptions? This question, insoluble on the dogmatic method, may be answered by the critical method.

We have seen that sense can contribute only the particular element in knowledge, and that the universal element is supplied by thought. A conception, therefore, on which a synthetical judgment is to rest can be nothing but a pure universal, having in it no concrete element. In all thinking which yields real knowledge the particulars of sense must be reduced to unity by being referred to a single supreme self, for, on any other supposition, there would be no unity in our knowledge as a whole. It is nothing to the point that we may not, in our ordinary consciousness, be aware that the self is the supreme condition of any real knowledge. It is enough if we can show that in all knowledge of reality the "I" must be present, and must manifest its presence in the actual fact of knowledge. Certainly, if we take the self apart from its activity, as manifested in knowing, we cannot get beyond the merely analytical judgment, I = I; but, when we seek to explain actual knowledge, we are compelled to see that, were there no identical "I," expressing its activity in uniting the particulars of sense, we could have no connected knowledge. The "I think," or "I unite," is, however, but the general expression of the condition of any real knowledge. But, as all knowing is definite knowing, or the thinking of the real world in specific ways, to intelligence as thinking there must belong universal forms or functions of unity, enabling us to reduce the manifold of sense to definite unity, order, and system. How do we know that to thought there belong such forms or functions? We know it from the fact that in our actual knowledge, the reality of which no one doubts, we do form real judgments. The fact that there are such judgments we do not seek to prove; our object is simply to show what the constitution of our thought must be in order to explain the fact. Now, if the self is the supreme condition of unity, and the categories the forms potentially capable of reducing the special manifold of sense to specific unities, we can see how real judgments are possible, and what will be their character. A real judgment must be the act by which a category, or pure universal, comes together with a manifold of sense. One other point, however, must be mentioned in order to complete our account of the conditions of real knowledge. All our knowledge comes to us in successive acts, and hence real judgments must operate upon the manifold of sense under the form of time. We must, therefore, explain how actual knowledge is possible, in accordance with the fact that we know real objects and their connection in a series of cognitions. Accordingly, it will be our aim in setting forth the various classes of real judgments to point out how the manifold of sense is related to the schemata or general determinations of time.

I have endeavoured, in the account just given of the relations of thought and sense, to emphasize the view which I take of the *Critique*, that it is an exposition of the constituent elements which we may logically distinguish in knowledge, not an account of the order in which our knowledge is developed in time. In every recognition of an external object as an extensive or intensive quantity, we bring into operation the categories of quantity and quality respectively, and this we do in the act by which we successively combine the particulars of sense. In our actual knowledge of a given substance, a given connection of events, or given objects as mutually influencing each other, we connect the manifold of sense under the silent guidance of the categories of substance, cause, and reciprocity, and connect them according to their respective schemata. And when we express what is implied in any of these actual cognitions, we are able to state the principle in a universal form, because the categories, as belonging to the very nature of our thinking intelligence, necessarily combine the manifold always in the same way. The principles of judgment are therefore at once philosophical *propositions* and ultimate *laws* of nature.

Just as a mathematical judgment is a proposition belonging to the science of mathematics, and at the same time a law manifested in the particular object to which the proposition refers; just as any scientific proposition goes to form the body of the science to which it belongs, and yet formulates a law to which all facts of a certain kind must conform; so the philosophical judgment that "all precepts are extensive *quanta*," or that "in all changes of phenomena substance is permanent," is not only a proposition belonging to the science of philosophy, but a law or principle manifested in our actual knowledge. When Kant speaks of bringing phenomena under a rule of the understanding, he does not mean that we *first* know the phenomena in question, and *then* bring them under the rule, but he means that, unless they were brought under the rule in the act of knowing them, they could not be known as real in the particular way which at the time we have under consideration. When, indeed, we *reflect* upon our knowledge, we express the act by which thought unites the manifold of sense in the form of a rule or proposition; but our reflection does not *create* the rule, but only *recognizes* it. Had not the rule been silently employed in the actual process of knowing the real object or connection, we should never discover it. Did Kant really mean to say that we first know real facts by sense, and afterwards subsume them under conceptions, his polemic against dogmatism would be a huge *ignoratio elenchi*; for, on this interpretation of his theory, the facts known by sense fall completely apart from the conceptions supposed to reduce them to unity, and the possibility of real judgments becomes inexplicable. So miserable a failure in his explanation of knowledge I refuse to attribute to

Kant. His real view is that thinking intelligence either constitutes objects as such, or connects objects with each other, by operating upon the detached manifold of sense. In the apprehension of a house, *e. g.*, I must have not only the separate impressions coming to me as my eye runs over it, but I must put together its spatial parts in the act of generating them: and, as the parts are put together under the guidance of the category of quantity, in apprehending the house I at the same time know it as an extensive *quantum*.

Kant makes no attempt to connect together the various principles of judgment; on the contrary, he regards each as independent and complete in itself. And it is easy to understand why he takes this view. Starting as he does from the notion of knowledge as completed, and embodied more especially in the mathematical and physical sciences, he naturally seeks only to demonstrate that such knowledge is inconceivable, if we persist in making an absolute separation of intelligence and nature, instead of conceiving of nature as constituted in its universal aspect by necessary forms of perception and of thought. In seeking to explain the demonstrative certainty of mathematical propositions, and their application to individual objects, and in seeking to show what are the universal laws of nature, he simply takes up one aspect of knowledge after another and points out the intellectual elements involved in it. Dealing, not with the temporal origin of knowledge, but with the logical constituents involved in it, he sets the various elements of knowledge apart by themselves, and combines them in a system, the form of which is chiefly due to his own external reflection. But while Kant does not so much render the "very form and pressure" of thought, as simply place its elements side by side; and while he is very far from tracing out, in all its delicate completeness, "the diamond net" with which intelligence envelops the particulars of sense, his presentation of the various principles of judgment half unconsciously follows the natural order of logical evolution. It is well also to observe that although he speaks of those principles as the highest laws of knowledge, and therefore of nature as a whole, Kant really concentrates his attention on external nature; in fact, he has expressly pointed out that the rules of the understanding are verifiable only in relation to objects in space. On the other hand, he virtually assumes space to be already determined, and only seeks to show how its parts can become known to us successively. In the first principle, formulating the axioms of perception, he abstracts from all the concrete wealth of the universe, and from all the connections of things, and limits himself to the question as to how space and objects in space are known as in time. And the answer he gives naturally is, that every individual object of perception is an extensive *quantum*, known to us in the successive addition of units, as guided by the unseen influence of the category of quantity. In what other way the external object may be determined, Kant does not here inquire, but confines himself to the proof of the proposition, that no external object is knowable at all without being known as an extensive *quantum*. His next step is to ask whether in the knowledge of external objects there is any universal and necessary characteristic; and he finds that while we cannot anticipate the special properties of things, since these are perpetually changing on us, we can anticipate that all objects capable of being known at all must have intensive quantity or degree. So far the question has not been raised as to what constitutes the reality, the connection and the mutual influence of objects. But this question is forced upon us the moment we make affirmations in regard to the relations of objects. We can no longer refer to our perceptions in proof of the reality of our knowledge. We have therefore to show by what right we assume objects to be permanent and actually connected. In the three Analogies of Experience this question is taken up, and it is proved, first, that the knowledge of real objects involves the application of the category of substance to the manifold of sense through the schema of the permanent; secondly, that the knowledge of real sequences can only be explained, if we presuppose the schema of order in time, as limiting the category to the particular determinations of sensible perception; and lastly, that the knowledge of real external objects, as mutually influencing each other, implies the schema of co-existence in time, as standing under the category of reciprocity. In the Postulates of Empirical Thought, Kant, having now considered external objects as such, and external objects as related to each other, raises the question as to the relation of external things to our thought of them. And the subjective criteria of knowledge he finds to lie in the possibility, the actuality and the necessity of our ideas. The final result of the whole investigation is to reverse completely the ordinary conception of the relations of intelligence and nature. The world of real things is not an independent congeries of real things externally taken up into our minds, but a system of objects constituted for us by the activity of our intelligence as acting on the particulars of sense.

CHAPTER VI.

PROOF OF THE PRINCIPLES OF JUDGMENT.

I. UNDER the title of *Axioms of Perception*, the first of the two mathematical principles of judgment, Kant shows how the schematized category of quantity, when applied to the manifold of sense, determines all possible objects of knowledge as extensive quanta.[1] The proof is of the simplest character, being in fact almost explicitly stated in the explanation of the schema of number.[2] An extensive quantum, as Kant says, is one in which we proceed from part to part in the construction of a whole. Thus a line is generated by producing it part by part, beginning with a point, and at the same time putting together the parts thus successively generated. So every time, however short it may be, is produced by generating in succession one moment after another, and at the same time conjoining the moments in a whole. Now, no object can possibly be known to us except as informed by space or time, or by both. But space and time are forms of our perception which become objects of knowledge only by being determined to individual spaces and times. It is evident therefore that all possible objects of perception must be extensive quanta. They are not things in themselves but phenomena, and must therefore conform to the condition under which space and time are determined in the apprehension of any object in space or time. The same synthetical process by which space and time are determined to the unity of individual spaces and times is presupposed in the determination of concrete objects as in space and time, and therefore all perceptions are extensive quanta.

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[1] *Kritik*, pp. 155-8.

[2] *Ibid.*, p. 144.

This constitutes the whole of Kant's proof of the proposition that all perceptions are extensive quanta, but some remarks are added for the purpose of showing (1) that this principle affords the only ultimate explanation of mathematical axioms and numerical formulæ, and (2) that it alone justifies us in saying that mathematics is applicable to all possible objects of experience. (1) That there are axioms in geometry, as the science of pure extension, arises from the nature of the pure imagination, which by its schema of number generates figures in space by successively adding part to part. The propositions, "between two points only one straight line is possible," and "two straight lines cannot enclose a space," are axioms, because they are universal and yet rest upon a synthesis of pure perceptions. Numerical formulæ, again, are synthetical and *a priori*, but as they are not universal but individual propositions they do not attain to the rank of axioms. In the proposition 7 + 5 = 12, I am compelled to go to pure perception in order to pass from subject to predicate, and hence the judgment is synthetical and *a priori;* but on the other hand, it is not universal but individual, because the synthesis of units making up 12 can only take place in one way, although no doubt the use of the numbers is afterwards universal. In the construction of a triangle I am not tied down to any one way of producing it, but may construct the lines and angles as I please, provided I conform to the schema of a triangle, whereas 7, 5 and 12 are individual numbers which can be produced by the productive imagination only in one way. Again the propositions, "if equals be added to equals the wholes are equal," and "if equals be taken from equals the remainders are equal," are not axioms, because they are not obtained by a synthesis of pure perceptions. In the very conception of the relation of equals as expressed in the subject of each of these propositions, there is implicit a conception of the equality expressed in the predicate, and hence the propositions are not synthetical but analytical. (2) The applicability of mathematics to phenomena at once arises from the principle, that all perceptions are extensive quanta, and can be established in no other way. So long as it was supposed that real objects are things in themselves, it was impossible to avoid falling into contradiction and confusion when an explanation was attempted of the relation of mathematical judgments to concrete things. Thus it was maintained that the mathematical principle of the infinite divisibility of lines and angles is only true of geometrical figures, not of things themselves. When, however, we see that things as known are not independent of our perceptive faculty, it is at once evident that what is true of space and time will be equally true of objects in space and time. For as no object is knowable at all except as determined in space and time by the synthesis of the productive imagination, objects as known must necessarily conform to the nature of space and time as determinate. To deny that mathematics is applicable to objects is to make objects things in themselves, and so to destroy the possibility of mathematics itself. Unless space and time are forms of our perception, mathematical judgments cannot be at once synthetical and *a priori*; and if they are forms of perception, known objects cannot be things in themselves, and there is therefore no reason whatever for denying the applicability to them of mathematical judgments.

It is important to observe that Kant does not here mean to affirm that perception first gives us a knowledge of individual objects, which are afterwards brought under the category of quantity. "What quantity subsumes," says Dr. Stirling, "is a series [of crude sense-presentations] in time, like part succeeding like part in pure contingency of sequence till the category acts."[1] This way of stating the matter converts Kant's metaphysical theory of the elements implied in real knowledge into an account of the transition from our ordinary to our reflective consciousness of things. The "crude sense-presentations" which form the particular element in our knowledge of determinate objects are but a detached manifold of sense, completely wanting in unity and universality. Strictly speaking, the "manifold" is not even a series, for time is determined by the synthetic imagination, which is itself ruled and guided by the category. Apart from the category of quantity, there can be no knowledge of an object as a whole made up of parts. It is therefore not correct to say, that like part succeeds like part in pure contingency *till* the category acts. How can there be any consciousness of a *series* of like parts except by a determination of time through the productive imagination? How again can there be any consciousness of a *unity* of like parts except by application of the category of quantity to the schema of the imagination? The various elements of knowledge, as Kant himself says, constitute a "closed sphere" in which each exists only in relation to the others. The true view, therefore, is, not that we first have a knowledge of objects in space and time and then apply to them the category of quantity, but that in our knowledge of such objects the application of the category is presupposed. That we do not, in our ordinary consciousness, set the category of quantity distinctly before our minds is nothing to the point; it is enough if it can be shown that, in reasoning back from our ordinary knowledge, we are compelled to suppose that besides the sensuous manifold there are implied those other elements of knowledge which act in combination, although they are logically separable from each other.

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[1] *Journal of Speculative Philosophy*, xiv. 76.

II. The conclusion to which the first principle of judgment leads is that, looking at objects of knowledge, simply as objects, *i.e.*, apart from their connection with each other, we do determine them as extensive quanta, and that this is consistent, and alone consistent, with what has been shown in the *Æsthetic*, viz., that space and time are forms of perception. Kant, of course, does not *prove* that space and time are extensive quanta, but simply draws attention to the fact that they are so: what he proves is that every possible object of our perception must be an extensive quantum, because it could not be known as an object, unless we had the forms of space and time as belonging to our perceptive faculty. As space and time are forms of our perception, we cannot get rid of them, and cannot perceive without them, and therefore, however the special objects of perception may vary in their proper-

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[1] *Prolegomena*, § 39, p. 111.

ties, they *must be* extensive quanta. So far nothing has been determined as to the special nature of the manifold of sense, considered in *itself*. Abstracting from everything in objects except their existence in space and time, it has been shown that to be known as in space and time, they must be brought under the category of quantity, schematized as number. The next step is to show that the manifold of sense, considered in its separate units, must be brought under the category of quality, schematized as degree. The proof of this proposition is given in the *Anticipations of Observation.*[1]

In all observations of real things there is implied, besides the pure perceptions of space and time, a particular element contributed by sense which constitutes the *real* in our knowledge of objects. Now this real, inasmuch as it is not obtained by the successive addition of like units, but is given in a single moment of time, cannot have extensive quantity. At the same time, each sensation or part of the manifold has a certain intensity, since it may be represented as capable of a gradual decrease to zero, and of a gradual increase from zero upwards. And this is intensive quantity or degree, which may be defined as a unity in which multiplicity is apprehended, not by the aggregation of parts, but by approximation to zero. Any given manifold of sense has, therefore, a degree, intermediate between which and zero there is always a series of possible realities. Every colour and every temperature has a degree, which as real is never the least possible; in other words, the real in every phenomenon has intensive quantity or degree.

After showing that the real in known objects necessarily has degree, Kant adds one or two general remarks. (1) The title *Anticipations of Observation* is employed to suggest, that we can tell beforehand that any specific impression whatever must have an intensive quantity, which, however small it may be, is always greater than zero. This is a very remarkable fact, inasmuch as sensation is exactly that element in knowledge in relation to which we are purely receptive. The explanation is, that we are here dealing, not with a particular quality, which is always empirical, but with the *quantity* of that quality: hence we are concerned with one of the essential conditions of knowable existence. (2) It is further to be observed that all quantities, whether extensive or intensive, are continuous.[1] Space and time are not composed of separate parts which are put together to make up space or time as a unity, for space and time are only limited by themselves; in other words, the so-called limitations of space and time really continue them. Such quantities may also be called *flowing*, because the synthesis of the productive imagination in generating them is a continuous progress in time. When this synthesis is interrupted, or alternately stopped and renewed, we have indeed an aggregate of several objects. Thus thirteen shillings, as so many coins, is not a quantum, but an aggregate or sum; but each unit in this sum, as divisible to infinity, is a quantum. (3) That this principle is of great importance in its applications may easily be shown, even without anticipating what belongs to pure physics. If the real in a knowable object must always have a degree, it is evident that we can never have experience of a space or time which is absolutely empty. For as every affection of sense has a degree, and every knowable object contains an element contributed by sense, apart from the determination of the manifold of sense by the schema of degree, no object can be known to us at all. Moreover, as the real may pass through an infinite number of degrees, but can never reach absolute zero, the degree of a phenomenon may be indefinitely decreased, while the space which it occupies remains exactly the same. The heat in a room, *e.g.*, may pass through an infinite number of degrees without leaving any part of the room unoccupied. This is indeed denied by almost all natural philosophers. Any diminution of degree in the same volume or extension of matter, implies, according to them, a decrease of extensive quantity. It is argued that as the quantity of matter in different bodies of equal volume is unequal, there must be empty spaces between the particles of every body. But this reasoning rests upon the metaphysical assumption, that the real in space is determined purely by the number of parts existing side by side, and that each part has exactly the same degree of intensity. It is overlooked that equal spaces may be completely filled by infinitely various degrees of reality. Decrease in intensive quantity does not necessarily imply decrease in extensive quantity. There is nothing to prevent us from supposing that the former changes, while the latter remains the same. We cannot, of course, say *a priori* what the degree of reality in any given case will be; but we can say that every phenomenon must have some degree of reality, and that no part of knowable space can be perfectly empty.[1]

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[1] *Kritik*, pp. 158-165.

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[1] This, of course, although it is set down under the head of the *Anticipations*, is a general remark on the relation of the two mathematical principles, as is also the remark immediately following.

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[1] It will be observed that Kant virtually asserts the logical priority of the

III. Having shown what is implied in the knowledge that individual objects are extensive and intensive quanta, Kant passes in the *Analogies of Experience*, to a consideration of the various ways in which those objects are connected together.[1] As this part of the Critical philosophy has provoked a good deal of adverse criticism, it will be advisable to give a somewhat detailed statement of it.

1. The *First Analogy*[2] is that of the permanence of substance, and is thus formulated: "In all alternation of phenomena substance is permanent, and its quantum in nature neither increases nor diminishes." The proof is as follows:—It is evident that in our ordinary and scientific consciousness we distinguish between real objects and the transient states which occur in the individual mind. A real object is one that we regard as permanent. Can we then explain from the nature of our knowledge how, from the conception of the permanent, we are entitled to ascribe permanence to objects? With the real sequences of events and the real co-existences of objects we are not here concerned, but only with the permanence which we attribute to substances. Granting, then, that there are objects in space and time, can we justify the assumption that these objects are permanent? Now we are dealing here purely with phenomena, *i. e.*, with objects in space and time, not with things in themselves existing independently of our knowledge. How then can it be shown that these objects do not pass away with the moment but persist through time?

category of quality to that of quantity: in the determination of real objects as extensive quanta their determination as intensive quanta is implicit. This agrees with what was said above in Chap. v. as to the relation of the various principles of judgment.

[1] *Kritik*, pp. 165-192.

[2] *Ibid*, pp. 169-173.

If we look merely at the succession of our own mental states, *i. e.*, our feelings as they occur in time, we are unable to show that there are real objects distinct from them, which do not perpetually change upon us from moment to moment. If our knowledge were reducible to a mere series of feelings, instead of saying that objects are permanent we should rather say, granting that we could make any judgments at all, that all known objects are in perpetual flux. "In mere sequences," as Kant says,[1] "existences always vanish and reappear, and have never the least quantity." Abstract from everything in knowledge but a succession of mental states, and we have simply a series of feelings having no temporal duration or quantity; and from such a mere series any knowledge of real objects having a temporal duration or quantity cannot possibly be extracted. There must, then, be some mental element distinct from a mere series of feelings, which enables us to affirm, that there are real objects which are permanent. Can we point out what that element is?

Now all objects of perception are of course in time; for time, as the *Æsthetic* has proved, is the necessary condition without which we could have no perception of objects at all. Time we must regard either as a mere potential form, belonging to our perceptive faculty but not entering into our actual perceptions except in relation to known objects, or as determined to individual moments, each of which follows upon the preceding and is over before the succeeding moment begins. It is impossible therefore to account for the permanence of real objects simply from time. In itself time is simply a form of perception, and therefore nothing for knowledge.

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[1] *Kritik*, p. 170.

Time, again, in its several moments cannot be identified with the duration of objects, because duration is not a succession of moments, but a succession which, so to speak, stands still. When we say that an object is permanent, we mean that it endures while the moments of time pass away, and as the moments of time do not themselves endure, but are perpetually arising and disappearing, the knowledge of things as permanent cannot be obtained either from time in itself, or from time in its separate moments. Still, the permanence of things must imply some relation between the manifold of sense and time. The three possible relations of objects in time are permanence, sequence, and co-existence. Time itself neither endures nor passes away; nor again does it co-exist; but objects or events may endure, succeed, or co-exist. Hence the permanence of objects can be accounted for only by bringing them into relation with time. It is therefore in the relation of the manifold to time, that we must seek for the explanation of substance as permanent. That there is a permanent in our knowledge we are compelled to suppose, unless we are prepared to deny all perception of change. And even if we deny all change in the properties of objects, we must at least admit that we have a consciousness of our own feelings as successive. But such a consciousness evidently implies, that there is in knowledge an element which cannot be identified with the mere sequence of our feelings. Apart from the conception of the permanent as contributed by the understanding, there could be no consciousness of objects as permanent. Without the permanent, in short, we could have no time-relations. "To use an expression which seems rather paradoxical, only the permanent changes, and the transitory can undergo no change." The permanent, then, which is the schematized category of substance, must be presupposed in order to account for our knowledge of any real object as distinguished from the mere series of our feelings. The principle of substance thus shows us how we are entitled to make the synthetical *a priori* judgment, that in all alteration of phenomena substance is permanent. Apart from the category of substance, schematized as the permanent, we could have no knowledge of any changes whatever, and therefore no knowledge even of our feelings as changing. Every object that is determined as real is necessarily brought under the schema of the permanent; in fact, real existence and permanence are identical conceptions. And as all real objects are necessarily permanent, the changes which they undergo cannot effect their reality; and hence the quantum of substance can neither be increased nor diminished.

Our knowledge, then, of real objects presupposes the schema of the permanent. Unless all changes of phenomena were connected together, there could be no unity in our experience, and unity in experience implies unity of events in time. This may be shown indirectly. Suppose, says Kant, that an absolutely new object should come within our knowledge, *i.e.*, an object not known to us by the changes observed to take place in it. Such an object must either (1) be known as a change relatively to the permanent, in which case it is not a newly originated object, but only a change in that which already exists; or (2) we must suppose that our experience is split in two. (1) An absolutely new substance is one that previously did not exist in time, and, therefore, is not capable of being known as existing in time. Now we can have no experience of pure time, but only of events in time. Hence, if we are to know this new object as coming into existence at a certain moment of time, we must be able to fix the moment of its origination by a reference to that which is already known as existing in time. But to perceive that a new object has emerged in time is to recognise that a change has taken place in our knowledge of objects, and such recognition is possible only if the new object is brought into the same time with that previously existing; in other words, the new object is known as a change, and change is nothing apart from the permanent, in contrast to which it becomes known. The object supposed newly to originate cannot, therefore, be known as originating. (2) If, on the other hand, the new object is not brought into relation with the old, then our experience must be divided into two halves, having no connection with each other. And, as all experience implies time, the new object must be in one time and the old object in another time. But it is absurd to say that there are *two* times, existing side by side; and hence there cannot possibly be any experience of an absolutely new object. All experience of real objects is, therefore, simply an experience of change in that which is permanent.

Kant's proof of the principle of substance may be shortly summarised as follows. There can be no knowledge of objects as real, if we suppose known objects to be things in themselves lying beyond consciousness; for, on this supposition, our knowledge must be obtained from a mere series of feelings, or must rest on the mere conception of substance. But a mere series of feelings is but an alternation of feelings, revealing no object that persists beyond the moment; and a mere conception does not entitle us to make any affirmation about real existences. Nor, again, can it be said that the permanence of existences, which is essential to their reality, may be explained by saying that time is permanent, and, therefore, feelings in time may be known as permanent by relation to time. For time, as a mere form, is no object of knowledge, and time, as individual moments, has no unity in it. The reality of things is, therefore, made possible only by the relation of the manifold of sense to the schema of the permanent, as guided by the category of substance, which again stands under the supreme unity of self-consciousness.[1]

To this proof of the principle of substance Kant adds some remarks, which are intended to show that it has been tacitly assumed, even by those who were unaware of the method by which it may be proved. The principle of the permanence of substance has been taken for granted by the unphilosophical mind, although, of course, it has not been brought into explicit consciousness. It has also been assumed by the philosopher, in the form that "in all changes in the world substance remains, and only its accidents vary." But while it has been assumed, no one has attempted to prove it. It has, in fact, been accepted as a self-evident proposition, and has, therefore, virtually been supposed to be a merely analytical judgment, resting upon the bare conception of substance. To say that "substance is permanent," is simply to express in the predicate what is already implied in the subject. By an analysis of the conception of substance, we can, of course, obtain the judgment, "substance is permanent," for in the conception of substance we already have implicitly the attribute of permanence.[1] But it is one thing to show that we have the conception of substance, and another thing to demonstrate that this conception is applicable to real objects. Now this is just what no dogmatic philosophy can possibly establish. The only proof admissible is a transcendental one, and that proof we have supplied by showing that, apart from the conception of permanence, there can be no knowledge of an object as real. The analytical judgment, "substance is permanent," therefore pre-supposes the synthetical judgment that in all phenomena there is something permanent, of which all changes are but modes. Now we can see why the permanence of substance has been so commonly assumed. The conditions of knowledge are such that no object can be known at all without being determined as permanent, and hence it is easy, by mere analysis of our knowledge, to obtain the analytical proposition, that substance is permanent. As we have ourselves contributed the element of permanence to objects, an analysis of our knowledge must, of course, bring it to light.

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[1] Here again it should be noted, that just as *quantity* logically presupposes *quality*, so both presuppose *substance*, since no actual object, and therefore no determination of an actual object, is knowable apart from the schema of the permanent.

Other cases in which the principle of substance is virtually assumed may be given. The natural philosopher lays down the principle, that "matter is indestructible," and this is evidently only another form of the principle that substance does not change, but only its accidents. So the ancient sayings, *Gigni de nihilo nihil* and *In nihilum nil posse reverti*, presuppose the same principle. These propositions, however, are not true of things in themselves, but only of things in space and time or phenomena. That they rest on the synthetical *a priori* principle of substance, is evident from the fact that they apply to the past and the future as well as to the present, and, therefore, affirm absolutely and without any limitation, that all changes are modes of the permanent.

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[1] *Cf. Prolegomena*, §§ 3, 47, and 48.

2. Kant has now shown that to have an experience of objects in space and time, we must be capable of determining objects as extensive quanta, and as intensive quanta; and that to know them as real, we must determine objects as permanent, notwithstanding the changes they undergo. Thus, experience of real objects is shown to depend upon the constitution of our intellect, in so far as we determine objects as extensive quantity, as having a degree in regard to their properties, and as being individually considered permanent or persisting through successive moments of time. He now goes on to consider what is implied in the changes which objects undergo: in other words, to show that a real sequence of events implies the intellectual schema of necessary sequence or irreversible order in time. The *Second Analogy of Experience*, in which the proof of the causal connection of events is set forth,[1] is, as Dr. Stirling remarks, one of the most confused passages in the whole of Kant's writings. It may, however, be reduced to a moderate compass by the rejection of the first two paragraphs, which were added in the second edition, and which simply give an outline of the general argument as contained in the first edition; and by the elimination of the reply to the objection that there are causal connections which are not successive, but simultaneous, and of the remarks on the conception of force, which properly belong to the metaphysic of nature,

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[1] *Kritik*, pp. 173-187.

and will be considered in their proper place. The discussion, thus brought within moderate limits, may be divided into three sections (not explicitly distinguished by Kant), containing respectively a statement of the facts admitted by every one, a criticism of the ordinary explanation of causality, and a proof of Kant's own theory.

(1.) The special topic under consideration is whether we can account, from the nature of our knowledge, for the real sequence of events, and whether we are entitled to assert, universally and necessarily, that events are connected together in causal relations to each other. Kant, as usual, starts from the facts of experience, as they are held by us all. Those facts, as far as we are concerned with them in dealing with the question of causality, are these. (*a*) We do, as a matter of fact, distinguish between the arbitrary sequence of our own mental states and the orderly sequence of events, just as we distinguish between the arbitrary sequence of our feelings and the co-existence of the quantitative parts of individual objects. Thus, to take an illustration of the second case, we observe the parts of a house in succession, but every one knows that those parts are really co-existent, and not successive. (*b*) What we ordinarily mean by a real sequence is equally obvious. We do not suppose that the parts of a house are successive, although we observe them in succession, but we do suppose that a boat drifting down a stream is an instance of a real sequence. It is quite obvious that the parts of the stream successively occupied by the boat must be passed through in order, and the sequence we, therefore, regard as real.

(2.) These, then, are the facts to be explained: the distinction between an arbitrary sequence in the order of our perceptions, and an orderly sequence in real events. What, then, is a real sequence? and what is the explanation usually offered in proof of the assumption that every real event is connected with events going before it?

Now (*a*) a real sequence, if there be such, cannot, as is ordinarily supposed, be contrasted with the arbitrary sequence of our individual mental states, as changes taking place in things in themselves with the mere succession of those states. Kant does not here enter into any proof that we cannot know things in themselves, but contents himself with remarking that, as in this view, changes are supposed to occur in objects lying beyond the sphere of our knowledge, we are unable to say anything whatever as to real sequences; the only sequences we can possibly know are sequences *within* consciousness, and real sequences are *ex hypothesi* beyond consciousness, and, therefore, unknowable. We are, in fact, as Hume pointed out, compelled to reduce real sequences to certain individual sequences of our mental states, only arbitrarily associated together, and not known as really connected. Instead of a knowledge of real sequences, we are reduced to a mere play of ideas.

(*b*) In accordance with the false supposition that known objects exist independently of consciousness, the dogmatist supposes causality to be known by mere observation. We observe or perceive, it is said, that two events—say fire and heat—are conjoined in this way, that the fire as cause first exists, and then is followed by the heat as effect; and we find, by comparison of the perceptions which we make at different times, that fire always goes first, and heat comes second. Similarly, we discover, by a comparison of perceptions made at various times, that there are many events connected in a definite order, as, *e.g.*, snow and cold, sun and heat, etc. From the comparison of these various instances of the orderly sequence of events on each other, we abstract the universal rule, that *all* events have a cause. Now, there are two objections to this view. It is supposed by it that we not only observe real events, but that we observe real sequences in events. But (a) this explanation of orderly sequence makes the principle of causality a merely analytical or tautological proposition. Of course, granting that we have somehow obtained the conception of causality, *i.e.*, of the orderly sequence of events on each other, we can, by a mere analysis of our conception, obtain the proposition: "Every event has a cause." But we only obtain it because we have assumed it beforehand. We are supposed to observe real sequences in particular cases, and to combine these in a general proposition by an act of reflection. But this overlooks the all-important point, that an analytical judgment cannot add anything to our knowledge, but can only express what is already implicit in it. In other words, the ordinary view does not *explain* the origin of the principle of causality, but merely *assumes* it, and assumes it in defiance of the fact that from a mere conception we cannot pass over to reality. Hence the fact that by analysis we can bring the principle of causal relation into logical clearness, presupposes, as in all other cases, that that principle is based upon a prior synthesis. We are able to prove the analytical proposition, "Every event has a cause," only because we have previously by a synthetical process made the sequence of real events possible. Thus, we do not obtain the conception of cause by reflecting on real sequences, but, on the contrary, the conception or category of cause is the condition of there being for us any real sequences. (*b*) Even granting that from observation we obtain a knowledge of certain real sequences, we are not entitled to affirm that *all* events must have a cause. Induction or generalization cannot take us beyond the facts on which the induction or generalization is founded. Now, all that we can have observed is that, within our limited observation, certain events always follow certain other events. The proper form, therefore, of the principle of causality should be: So far as I have observed, every event has a cause. But this is only a *general*, not a *universal* proposition, and hence it falls short of the true principle of causality.

(3.) We are now in a position to appreciate Kant's own proof of the principle of the causal relation of events. It contains three steps: (*a*) a mere sequence of feelings or ideas, gives no criterion for distinguishing an orderly sequence of events from an arbitrary sequence of individual feelings or ideas; (*b*) real sequence cannot be obtained by an observation of separate events as in time; (*c*) real sequences can, therefore, only be explained on the supposition that the understanding, acting through the schema of order in time, makes the knowledge of real sequences possible.

(*a*) We saw above that the mere sequence of mental states cannot be contrasted with the real sequence of events, as mere ideas in the mind with real changes going on beyond the mind. For this supposes real events to lie beyond the sphere of our knowledge, and hence to be *ex hypothesi* unknown. The real sequences we have to explain, if there are such, must be sequences not without, but within consciousness: in other words, they are changes taking place in real objects existing in space and time, as distinguished from our feelings or ideas, which exist only in time. Thus both our feelings and real events are alike in consciousness, or can exist only as they are known to exist. Both are alike objects of consciousness—using the term "objects" in the most general sense, as anything present to our consciousness. Now, the difficulty we have to resolve is this: if all objects alike are in consciousness, how does it come that we distinguish the sequence of our feelings from the sequence of real events? Manifestly, it cannot be because our feelings are successive, while events are not, for both are alike successive. As real events are in consciousness, they can only be present to our consciousness in succession. How, then, do we come to distinguish subjective sequences from objective sequences? The old distinction, that subjective sequences are in the mind and objective sequences without the mind, is not tenable; and we must, therefore, find in the nature of our knowledge the explanation of the undoubted contrast we draw between these two kinds of sequence. Objectivity of sequence must have a different meaning from the ordinary one: every sequence of real events must be a combination of determinations existing only for consciousness. Now, it is at once evident that we need not seek for the distinction in the content of the real object or real event, for this content can be nothing more than ideas of some kind, which by a process of thought have become contrasted with mere ideas, existing only as subjective states. In other words, the distinction must lie in some mental form being applied in the case of the objective sequence, which is not brought into play in the case of the subjective sequence. There must be a rule or law of thought, accounting for the difference between the two kinds of sequence; and it is the presence of this rule or law of thought which makes the sequence of what we call real events *objective*. An objective sequence, in other words, is simply a sequence, which, as irreversible, is necessary and universal. We have, then, to explain how we come to distinguish the objective sequences of events from the subjective sequences of our feelings, and to do so while recognising that both sequences are alike in consciousness. Now, it is manifest that knowledge of any real event can be obtained only if we distinguish it from an event, different in content, going before it; for (as we saw before in the proof of substance) a single event, or rather determination, is not capable of being known, any more than empty time itself. In order, therefore, to have a knowledge of a real sequence, a transition from one object of consciousness to another must take place. But evidently this alone is not sufficient to account for a knowledge of real sequences. For all objects of consciousness occur to us in succession, and hence in all there is a transition from one state to another different from it. The parts of a house, *e.g.*, I observe successively, and hence in my consciousness there is a transition from one state to another, and a transition which implies sequence in time. No one, however, supposes that the parts of the house are successive, although they present themselves successively to my consciousness. On the other hand, the presentation in my consciousness of the successive occupancy of the parts of a stream by a drifting boat, is also successive; but here we do not, as in the case of the house, suppose that the boat occupies the parts of the stream co-existently, but, on the contrary, we regard it as occupying them only in succession. How, then, are we to account for the fact that, while all consciousness implies a transition from one state to another, we nevertheless distinguish between a real succession of events and a mere succession of individual feelings. Now, if we look at the instances already given, we see that, while the objects are in both presented successively, we do, as a matter of fact, regard the two successions as essentially different. And the difference lies, not in the fact that the manifold is in the one case presented to our consciousness in succession and not in the other, but that the manifold of the house is presented to our consciousness in *any* order, while the manifold of the boat is only presented in *one* invariable order. The explanation of the difference must, therefore, be sought, not in any difference in objects of consciousness as such—as if some were co-existent and others sequent—nor in any contrast of ideas within the mind and objects without the mind, but in a difference in the *nature of the sequence*. That there are real sequences of events, just as there are co-existing parts of individual objects as extensive quanta, no one doubts; the point is to explain how, consistently with the fact that all objects are alike objects of consciousness, we come to mark off subjective from objective successions. The explanation must be sought in the nature of thought itself; for, as has been said, all objects are objects of consciousness, and so far on the same level. There must be a rule or law of thought, which accounts for the fact that we determine a certain manifold of sense to an invariable order in time. Apart from such a rule, we should never distinguish objective from subjective sequences at all; at the most we should have but a "play of representations," coming and going, but giving us no knowledge of objects as connected in time. We could not say: This event follows another, but only: This state of consciousness follows another.

(*b*) It may, perhaps, be said that the sequence of real events as objects of consciousness can be proved from the fact that objects of consciousness are always successive. But such an explanation is at once precluded by the consideration that objects of consciousness are not capable of being fixed in an invariable order by a simple reference to time. For time *per se* is not capable of being known; it is not something that can be observed, as outside of us, but a mere potential form, that comes into knowledge only in relation to known objects. But, if all objects, internal as well as external, are relative to consciousness, we come back to the difficulty of explaining why we distinguish objective from subjective sequences; and this shows that, to explain how a knowledge of real events is possible, we must presuppose the schema of orderly succession as a rule of thought. That there is an order in known events every one admits. This order in time is not, however, capable of being accounted for by saying that we observe certain states of objects, and determine them to an order by reference to time. For such states, if we abstract from the order in which they occur, are separate from each other, and a separate state is not capable of being assigned any order, even by reference to time. For time is not itself observable; it is not a real object in which the states of the phenomena can be observed; taken by itself it is a mere form of perception. A single event, in short, has no determinate place in time, and therefore no order in time. Order in time can therefore only be known by the relation of states to each other as actually sequent.

(*c*) As then, all objects are relative to consciousness, and are successively presented in consciousness, and as no distinction of sequences from co-existences can be found in time itself, the rule by which an objective sequence is distinguished from a subjective sequence must be found in the Understanding. It is a common fallacy to suppose that the Understanding has no function but that of analysing or bringing into clearness what is already given in our knowledge of real objects. The real fact is that Understanding, so far from simply analysing our knowledge of real objects, or, in other words, our perceptions, first makes such knowledge possible. There could be no perception or experience of a real sequence were it not that Understanding reduces a certain manifold of sense to order, and so makes an experience of real sequences possible. In the present case, Understanding, having Causality as its category or function of unity, prescribes a law or rule to the manifold, by means of the schema of order in time, and so makes an invariable sequence in time possible. The orderly sequence of objects of consciousness is therefore due to Understanding. And, of course, like every law of thought, the sequence is necessary and universal: as there can be no knowledge of a real sequence apart from the activity of the Understanding acting through the schema of order in time, we can affirm universally and necessarily, that all changes must conform to the law of causal connection. We can therefore say that all the changes in nature are subject to this law. In other words, all real sequences stand under the synthetical unity of self-consciousness, without which there would be for us no unity in nature, and therefore no nature at all.[1]

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3. The *Third Analogy of Experience*,[1] which need not detain us long, is intended to show that "all substances, in so far as they can be observed as co-existing in space, are in complete reciprocity. In the First Analogy Kant showed that, while our perceptions always come to us in succession, they can be known as successive only in contrast to that which is not successive but permanent. In the Second Analogy it has been shown that there are irreversible sequences in knowledge which cannot be accounted for from a mere sequence of perceptions, since perceptions are not irreversible in the order of their occurrence. Now he goes on to show that, while our perceptions are always successive, we nevertheless have a knowledge of real co-existences, which are distinguishable at once from the arbitrary sequence of our perceptions, and from the necessary sequences of real events. In proving that substances mutually influence each other, Kant therefore presupposes both the conception of substance and the conception of causality.

Substances we ordinarily regard as co-existing when they are in one and the same time. Real events, on the other hand, we regard as coming after one another, or existing only in successive times. Now, that which is actually successive cannot be apprehended in any order but one, and hence, when we find that our apprehension may proceed either from A through B, C, and D to E, or inversely from E, through D, C, and B to A, we regard that which is apprehended as not sequent but co-existent. This, then, is the fact to be explained.

Now, granting that substances are in the same space,

The converse truth, that Substantiality presupposes Causality, is indicated in the "Metaphysic of Nature," where Matter and Force are shown mutually to imply each other. See below, Chap. viii.

[1] *Kritik*, pp. 187-190.

we must either say that they mutually influence each other, or that they are completely isolated from each other in space. If we adopt the latter supposition, we must suppose them to exist in absolutely empty space. But if they are so completely separated from each other, it would be impossible to determine that they coexist in one time. For, granting that we may apprehend first one and then another in succession, still we could not in any way connect the objects thus separately apprehended; and being unable to bring them into relation with each other, we should not be able to say whether they were coexistent or successive. Our perceptions would no doubt be successive, but as all perceptions are successive, we could not say whether the objects perceived were successive or co-existent. We must therefore suppose substances not to be isolated from each other, but to be mutually connected. And as a substance can only be related to another substance through its states, the states of all co-existing substances must be the product of their mutual influence on each other. But that without which there can be no real knowledge is necessary, being implied in the constitution of our intelligence; and hence all knowable objects are constituted as co-existent by the activity of thought which determines them in relation to time by the schema of coexistence.

IV. The Postulates of Empirical Thought,[1] which complete the consideration of the Principles of Judgment, simply state explicitly what are the conditions under which real knowledge is possible, and contain nothing that is not implied in the explanation of what those conditions are. (1) The First Postulate is, that "that which harmonises with the formal conditions of experience is possible." The formal conditions of experience are, as we know, space and time, and the categories as mediated by the schemata. Now, if we take any determination of space, such as a triangle, it seems at first sight as if the mere fact, that the conception is given in the act by which the triangle is constructed, were enough to show that an object corresponding to it may be found; in other words, it seems to be possible to show by the dogmatic method that mathematics is applicable to real things. But this, as a critical examination of real knowledge has made abundantly clear, is a mistake. Could it not be shown that the conditions which make the determination of the pure form of space possible are also the conditions without which no real objects could be known by us, we should not be able to show that the *a priori* constructions of geometry are more than products of the imagination. This, however, is what has been established; and hence we are entitled to affirm that the mathematical determinations of space and time are at the same time possible determinations of real objects. All quantitative determinations, in fact, as conditioned by the categories in relation to space and time, are determinations of things as to their possibility. Harmony with the *a priori* conditions of knowledge may therefore be employed as a test of the possibility of real things. (2) In order, however, to know that an object is not only possible but actual, something more is required than non-violation of the formal conditions of knowledge. An actual object can be known only when sense supplies a manifold which can be related to the category through the schema. The mere conception of a thing, however complete it may be, cannot be identified with actual knowledge of a thing; for the latter, sense must co-operate with thought. Still, even before actual experience takes place, we are able to tell what is capable of being experienced, in those cases in which we can bring into play the Analogies of Experience, which are conditions of the connection of things. We cannot have a direct perception of magnetic particles, but we are entitled to infer their existence in all bodies from their effects; and, guided by the analogies of experience, we know that, were our senses finer, we should have a direct perception of them. The Second Postulate of Empirical Thought, therefore, is, that "that which coheres with the material conditions of experience is actual." (3) Lastly, "that the connection of which with the actual is determined according to universal conditions of experience, is necessary." The necessity in question is not the merely logical necessity which depends upon the law of contradiction, but the necessity of actual existences. Now, the connection of one knowable object with another cannot be shown from mere perceptions, but only from the relation of perceptions. Nor, again, can it be based upon the pure conception of substance, because substances are connected together only by their states. Hence the criterion of necessity rests upon the principle of causality. When certain causes in nature are given, we are enabled to know what their effects must be; but apart from the principle of causality there could be no nature, and therefore no science of nature.

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[1] *Kritik*, pp. 192-197.

CHAPTER VII.

OBJECTIONS TO KANT'S PROOFS OF SUBSTANTIALITY AND CAUSALITY EXAMINED.

AN examination of the objections of Mr. Balfour and Dr. Stirling to what they regard as the critical method of proving the Principles of Judgment, will perhaps help to bring Kant's doctrine into bolder relief, and to make the force of the reasoning by which it is established better felt.

I shall first consider Mr. Balfour's criticism of the First Analogy.

"The first difficulty," he says, "which occurs to me, and which perhaps others may feel, refers to that 'transcendental necessity' which is the very pith and marrow of the whole demonstration, both in the Refutation and in the First Analogy. Is it really true that change is nothing to us as thinking beings except we conceive it as in relation to a permanent and unchanging substance? For my part, however much I try to bring the matter into clear consciousness, I feel myself bound by no such necessity. For though change is, doubtless, unthinkable, except for what Mr. Green calls a combining and therefore, to a certain extent, a persistent consciousness, and though it may have no meaning out of relation to that which is not change, this not-change by no means implies permanent substance. On the contrary, the smallest recognizable persistence *through* time would seem enough to make change *in* time intelligible by contrast; and I cannot help thinking that the opposite opinion derives its chief plausibility from the fact that in ordinary language permanence is the antithesis to change; whence it is rashly assumed that they are correlatives which imply each other in the system of nature. It has to be noted also, that Kant, in his proof of the 'First Analogy,' makes a remark (quoted and approved by Mr. Caird) which almost seems to concede this very point, for he says (*Crit.*, p. 140): 'Only the *permanent* is subject to change: the mutable suffers no change, but rather alternation; that is, when certain determinations cease, others begin.' Now, there can be no objection, of course, from a philosophical point of view, to an author defining a word in any sense he pleases; what is not permissible is to make such a definition the basis of an argument as to matters of fact; yet the above passage suggests the idea that Kant's proof of the permanence of substance is not altogether free from this vice. If (by definition) change can only occur in the permanent, the fact that there *is* change is no doubt a conclusive proof that there is a 'permanent.' But the question then arises, *Is* there change in this sense? How do we know that there is anything more than alternation which (by definition) *can* take place in the mutable? All Transcendentalists convince by threats. 'Allow my conclusion,' they say, 'or I will prove to you that you must surrender one of your own cherished beliefs.' But in this case the threat is hardly calculated to frighten the most timid philosopher. There must be a permanent, say the Transcendentalists, or there can be no change; but this surely is no very serious calamity if we are allowed to keep alternation, which seems to me, I confess, a very good substitute, and one with which the ordinary man may very well content himself."[1]

It is objected by Mr. Balfour, to take the last point first, that Kant himself grants that we can have a knowledge of *alternation*, as distinguished from *change*, and that, as alternation will not prove absolute permanence but only persistence through a limited time, the proof of substance is defective on the very face of it. The concession, however, which Kant is supposed to make is not really made by him. Mr. Balfour has simply misunderstood what "alternation," in the words quoted, is intended to signify. When Kant says that the "mutable undergoes no change but only alternation," so far from granting that the mutable can be known, his argument is, on the contrary, that it *cannot* be known, and *therefore* is useless to account for the permanence of real objects. Knowledge of a real object, as distinguished from a series of transient feelings, is a knowledge of that which does not pass away with the moment, but persists through successive moments of time. But if we eliminate from our explanation of knowable reality this conception of persistence through time, we are left with a number of isolated differences, that are not *changes*, but simply an *alternation* of the mutable, *i.e.*, a succession of differences perfectly destitute of unity. The "mutable," in other words, is a term signifying what I have elsewhere called detached points of impression, as "alternation" is the *mere* succession of such impressions, not even knowable as a succession. Kant could not admit that the mutable is knowable without committing himself to the absurdity of granting that a mere element of knowledge is knowable in itself. As a matter of fact, he holds nothing so absurd. All consciousness of change, he argues, is the consciousness of a transition from one determination of an object to another, and such consciousness is inconceivable if each determination is separated from every other. But unless thought has a function by which it brings the several determinations of things into relation with each other, there can be no consciousness of change. Mere alternation, or the successive rise and disappearance of such determinations, is nothing for consciousness, and hence all change presupposes permanence. Mr. Balfour has so completely missed the point of the argument, that he converts Kant's proof of the impossibility of a knowledge of mere alternation or mutation into an admission of its reality.

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[1] *Mind*, xii., p. 493.

When we clearly see Kant's reason for distinguishing between change and alternation, the positive objection brought by Mr. Balfour against the proof of the permanence of substances loses much of its plausibility. The objection is, that in order to have a knowledge of change it is not necessary "to conceive it in relation to a permanent and unchanging substance;" it is enough to have a knowledge of something which persists through even the smallest amount of time. Now, I think it is quite evident, from the form of this objection, that Mr. Balfour here borrows the weapons of the dogmatist, as the philosophical sceptic is very prone to do. The objection at once strikes one as an echo of Hume's account of identity as "a succession of interrupted perceptions."[1] I perceive an object as now and here, and so long as I keep my eyes upon it I know it to exist; but when I turn my eyes upon another object, and no longer perceive the first, how can I say that it exists? All that I am entitled to say is that I perceive an object to exist through a limited time; I am not entitled to say that it must persist through all time. Kant, according to Mr. Balfour, argues that I cannot have any knowledge of change without presupposing the absolute permanence of substance; but he forgets that the persistence of an object through the smallest amount of time is "enough to make change *in* time intelligible by contrast." Now, it is vain to deny that this objection goes on the supposition that objects exist independently of consciousness, and are passively apprehended by sense, without any aid from the constitutive power of thought. Apart from the assumption that we are entitled to affirm the reality of an object so long only as it is perceived, I do not see that it has any weight whatever. To give a complete answer to this objection it would be necessary to go over again the whole of the course by which we have already come. As this would be rather tedious, I shall simply indicate the line of reply that Kant's system suggests. A series of impressions—occupying say a minute—is enough, Mr. Balfour would say, to give us the consciousness of change. And no doubt this is true, if by impressions we mean impressions that are referred to a single self as the necessary condition of any unity whatever. If, on the other hand, by a series of impressions is to be understood an unrelated manifold of sense, it must be said that such a series, continued for ever, would never yield the consciousness of change. Now, unless we are to assume that the object said to be known as persisting for a minute is a thing in itself, having an independent reality apart from all relation to our intelligence, the consciousness of change must be accounted for from the nature of thought, as combining the impressions of sense successively presented to the mind. And such a consciousness of change must be at the same time a consciousness of the impressions as occurring in successive moments. The consciousness of a change of impressions as relative to time must therefore involve the consciousness of a something which endures, in contrast to which the passing moments of time are recognized. And this permanent must be supplied by thought, unless we suppose it to attach to an object independent of consciousness; for apart from the impressions of sense and the successive moments of time, there is no other source of the permanent. It is objected, however, that this does not prove absolute permanence. The answer is, that, as there are no things except those which are constituted by the activity of thought in relation to the impressions of sense, *all* change must be equally a relation of a manifold of sense in time to thought; and hence no change whatever can take place apart from relation to the one time in which all impressions occur. On any other supposition our knowledge would have no continuity, but would be broken up into fragments. The very same reasoning, therefore, by which the knowledge of something as persisting through a limited time is explained, also establishes the knowledge of something absolutely permanent, *i.e.*, existing through all time. We can therefore say, universally and necessarily, that every knowable object is permanent, because the condition of an object being known at all is its relation to a permanent self. Unless Mr. Balfour denies the unity of experience and the unity of time, I do not see how he can refuse to admit that all change is relative to the conception of the permanent:

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[1] Cf. Green's *Hume*, vol. i., p. 256.

and the permanent as changing *is* substance. Part of the difficulty Mr. Balfour feels in accepting Kant's proof of the permanence of substance seems to arise from the fact that he supposes objects to be not only independent of all relation to intelligence, but also independent of each other. Accordingly, it seems as if we might pass from one to the other and recognise each in turn as existing during the time it is perceived. But if it be admitted that all impressions are related to a single self, which is present to each as it arises, it is manifest that what we call individual substances owe their individuality to the distinguishing power of intelligence, and hence that the distinction of one object from another is merely relative. A substance is simply a certain sum of properties gathered together into a unity and fixed as permanent by relation to intelligence. If, therefore, the properties are real at all, the act by which they are constituted into a unity fixes them as permanent for all time. Kant, it should be observed, makes no attempt to prove the reality of the properties; these he assumes to be real or given to us, and he directs his attention to the task of explaining what is implied in their real existence; in other words, he endeavours to show that, unless on supposition of the constitutive power of intelligence, there could be no real knowledge at all. Substance is, therefore, simply the product of that function of thought by which real properties are united in relation to time; and hence the knowledge of existence implies the unity of self-consciousness, as determined by the category of substance.

That Mr. Balfour is really criticizing Kant from the dogmatic point of view, according to which known objects are conceived to be independent of all relation to intelligence, seems to be shown beyond doubt by the second difficulty he raises against the acceptance of the proof of substance. "Let us grant for the sake of argument," he says, "that change in general, or the succession of our mental states in particular, can only be perceived in relation to a permanent something, then I ask (and this is the most obvious objection) why, in order to obtain the permanent something, should we go to external matter? As the reader is aware, the 'pure ego of apperception' supplies, on the Kantian system, the unity in reference to which alone the unorganized multiplicity of perception becomes a possible experience; and it seems hard to understand why that which supplies unity to multiplicity, may not also supply permanence to succession. Kant has, indeed, anticipated this objection and replied to it; but as I understand the objection much better than I do the reply, I will content myself with giving the latter, without comment, in Kant's own words: 'We find,' he says, 'that we possess nothing permanent that can correspond and be submitted to the conception of a substance as intuition, except *matter*. . . . In the representation *I*, the consciousness of myself is not an intuition, but a merely intellectual representation produced by the spontaneous activity of a thinking subject. It follows that this *I* has not any predicate of intuition, which, in its character of permanence, could serve as correlate to the determination of time in the internal sense—in the same way as impenetrability is the correlate of matter as an empirical intuition.'—(*Critique*, p. 168.) Though I do not profess altogether to understand the reasoning, it is, at all events, clear from it, that 'the permanent' whose existence is demonstrated, must be an object of perception. . . . We may, I think, assume from the whole tenor of Kant's argument, as well as from his categorical assertions, that the substance of which he speaks is a phenomenal *thing*. But if it be perceived, and if it be a phenomenon, where is it to be found? In the perpetual flux of nature, where objects do indeed persist for a time, but where (to all appearance) nothing is eternal, who has had experience of this unchanging existence? By a dialectical process, probably familiar to the reader, we may with much plausibility reduce what we perceive in an object to a collection of related attributes, not one of which is the object itself, but all of which are the changing attributes or accidents of the object. But if this process be legitimate, the 'substratum' of these accidents is either never perceived at all, or at all events is only known as a relation. In neither case can it be the permanent of which Kant speaks, since in the first case it is not an object of immediate perception; in the second it can hardly be regarded as an object at all."[1]

Mr. Balfour first asks why the "pure ego of apperception," which "supplies unity to multiplicity, may not also supply permanence to succession." Now, as we saw in our examination of the Refutation of Idealism, and again in considering the Deduction of the Categories, the pure "I," taken in abstraction from the other elements of knowledge, is regarded as a mere abstraction, and hence as devoid of all determination. It is only when it is brought into relation with the multiplicity of sense that it is seen to be the supreme condition of synthesis. From Kant's point of view, the "I" and the manifold of sense are but the extreme poles of knowledge, between which other elements of knowledge lie, which are not less essential to the constitution of known reality. The pure "I," taken by itself, is simply the abstraction of relation to consciousness, and hence it is incapable of being brought into relation with the mere difference of sense, without the intermediation of more concrete forms of intelligence. Relation to consciousness is simply the most general expression of what is implied in any knowledge whatever. But actual knowledge is not knowledge in general, but concrete or specific knowledge. Hence it must be shown what are the specific ways in which the manifold is related to the "I," before an explanation can be given of knowledge as we actually have it. These specific ways of relating the manifold to the "I" are the categories, which as functions producing unity in certain definite ways at once specify the "I," and universalize the manifold by combining it under the determinate universals, which we call the categories. The manifold, again, cannot be directly referred to the "I," even by the aid of the categories, because the latter do not contain any time-element, or any space-element, and knowable objects must be determined as in time or in both space and time. In other words, the "I" is the most abstract element of knowledge at the one extreme, as the manifold is the most abstract element at the other; and the two extremes must be mediated by elements more concrete than either. When, therefore, Mr. Balfour asks why the "I," which "supplies unity to multiplicity, may not also supply permanence to succession," the answer is (1) that the "I" does not "supply unity to multiplicity," and (2) that that which is conceived as out of time, cannot relate anything to itself in time. (1) It is no doubt true that the "I" is said by Kant to be the supreme condition of the unity of the differences of sense, but it is not of *itself* capable of introducing unity. In explaining the possibility of knowledge our success depends upon the thoroughness with which we detect and relate to each other *all* the elements of knowledge. But to say that the "I" of itself "supplies unity to multiplicity," is to suppose that two elements of knowledge which even in combination are nothing apart from other elements equally essential, may of themselves constitute knowledge. It is the "I" as thinking in relation to the manifold of sense as brought under the general determination of time, which "supplies unity to multiplicity," not the "I" in itself. No doubt Kant expresses himself sometimes in a way which suggests that the "I" is a real thing existing apart from its determinations; but such passages as that quoted by Mr. Balfour, in which it is pointed out that the "I think" is merely the abstraction of relation to consciousness, serve to correct those in which the "I" seems to be regarded as an independent substance. (2) It should now be manifest why it is not possible for Kant to derive permanence from the "pure ego of apperception." Permanence can only be explained as the relation of the manifold to the "I," by intermediation of the categories and the schemata. The "permanent" signifies neither time alone, nor the manifold alone, but the relation of the manifold to time, as conditioned by the functions of unity belonging to the understanding. From the bare "I," as the mere abstraction of thinking in general, no ingenuity can extract the idea of an object as relative to a determinate time. Nor again can the "I," viewed as the subject of transient states of consciousness, be regarded as the source of the permanent, because, from Kant's point of view, mental states are in themselves a mere manifold, incessantly coming and going, and therefore having no permanent correlate. Accordingly, he holds that it is only in relation to an external object, as constituted by that function of synthesis which we call substance, that we can have any knowledge of the permanent. An external object, it must be remembered, is not a thing in itself, but a thing in space; and hence it is the product of thought as relating the spatial manifold to time as a whole. Kant, therefore, in deriving the permanent from the outer object and not from inner feelings, is simply maintaining in another way that knowledge must be explained by reference to *all* its elements. Separate perceptions from all relation to objects in space, and there remains but an alternation or mutation of feelings, of which we cannot become conscious, because we can neither know them as in time, nor in their distinction from each other. The "pure ego of apperception" is therefore powerless to recognise merely transient states of feeling, because the element of time, and the element of permanent relation, are by hypothesis absent.

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[1] *Mind*, xii., 494.

Mr. Balfour, however, seems to be so uncertain as to what Kant's view of the "pure ego of apperception" is, that he does not very strongly insist upon the objection that the pure "I" ought to be sufficient to "supply permanence to succession," but immediately goes on to raise what he evidently regards as a more formidable objection. To be known at all, the "permanent" of Kant, he argues, must be an object of perception, or phenomenal thing. Now, such an object cannot, it would seem, be perceived in itself, but only in its changing attributes or accidents. The permanent must therefore be a substratum underlying the accidents. Hence either (1) it is not an object of perception, or (2) it is a mere relation, and therefore not an object at all.

This objection rests upon a false separation of an object from its relations. "Either a perceived object is a mere substratum, *or* it is a mere relation." But what if it is neither the one nor the other, but both in one? This at least is Kant's view, and hence Mr. Balfour's dilemma shares the common fate of dilemmas in being by no means exhaustive. (1) The permanent, it is said, may be held by Kant to be a "substratum" of changing attributes or accidents. Here, again, Mr. Balfour cannot get rid of the parallax of dogmatism. First setting up the fiction of a material thing lying beyond consciousness, and yet inconsistently supposed to be capable of being apprehended, we go on to ask what a thing is for a mind standing apart from it. One by one the attributes of this supposed object are transferred to consciousness, and there is left at last simply an abstract "substratum" supposed to underlie the attributes apprehended. What we perceive in an object is thus reduced, in Mr. Balfour's words, to "a collection of related attributes, not one of which is the object itself." Now, it seems almost superfluous to say that, although Kant speaks of substance as a substratum of accidents, he has no thought of asserting the existence of a substratum such as Mr. Balfour speaks of. As we have repeatedly seen, Kant is quite familiar with the "dialectical process" here referred to, but he employs it for the purpose of showing that the dogmatic explanation of knowledge is essentially vicious, resting as it does upon the assumption that known objects are things in themselves. What Mr. Balfour calls "a collection of related attributes," Kant terms the "manifold of sense"; and just because such a "manifold" is nothing for knowledge, he holds that we are compelled to introduce other elements which are essential to the constitution of reality. Accordingly, Kant would at once demur to the phrase "collection of *related* attributes," on the ground that relation does not belong to sense, but to thought—or rather to thought, as determined by schemata of the productive imagination. Instead of saying that beneath or behind the known attributes of things there is an unperceived "substratum," Kant maintains that there is a "permanent" supplied by the pure imagination under control of the category. The fiction of a thing in itself is therefore nothing whatever for knowledge, and hence Kant is not called upon to show how a "substratum" may be perceived. *His* "substratum" is a general form of intelligence required to account for the perception of objects, not something underlying an object independent of consciousness. Persistence through time, or the relation of the manifold to time as a whole, is the only substratum he can allow, and not any ghost of abstraction remaining after elimination of all the definite properties of independent realities. The permanent is thus simply another name for the capacity of relating all modes of perception to a single time. When Kant calls this permanent a "substratum," he is probably looking at the matter from the point of view of the data from which philosophy starts in its explanation of knowledge. From this point of view it is natural to say that under all the changing attributes of real objects there is something which does not change. But when we pass to the critical point of view, it is more correct to say that the substratum overlies those attributes, than that it underlies them, although it may be said to underlie the categories and the "pure ego of apperception." (2) As the permanent of Kant is not a "substratum," in Mr. Balfour's sense of the term, so neither is it a mere relation. Here, again, it must be observed that Mr. Balfour is under the influence of that dualism of subject and object which is the characteristic mark of dogmatism. An object lying beyond consciousness is presupposed, and it is then supposed to be reduced to "a collection of related attributes." If now we abstract from the attributes, and concentrate our attention upon their relation to each other, we get the conception of a mere relation; and this we may call the permanent, because it is implied in the consciousness by which each attribute is related in turn to another. But such an abstract relation cannot be identified with a permanent object. Now, it is evident that just as Mr. Balfour in reducing substance to a mere substratum abstracts from all the relations of intelligence to an object, so here he abstracts from all the differences which are essential to the constitution of the individuality of an object. But this is exactly what Kant refuses to do. The mere abstraction of relation to consciousness is just the pure "I think," which, as Kant points out, cannot of itself explain how a knowledge of objects is possible. No doubt the manifold of sense, or the particular element in knowledge, must be related to the one single and identical self, but this relation is not of itself the same as a known object. The particular is as necessary to the constitution of a substance as the universal. Moreover, the universal form of thought, as standing under the "I," must be brought into relation with time as a unity before the knowledge of an object as permanent can be accounted for. Nor am I aware that any follower of Kant, any more than

Kant himself, reduces an object to mere relations. There is no mysterious process by which the concrete element in knowledge may be reduced to abstract relations. It is one thing to say that all the real differences of things are relative to intelligence, and quite a different thing to say that all reality is reducible to abstract relations. The special properties of things are not to be conjured out of existence, charm we with ever so wonderful subtlety: but this is not inconsistent with the philosophical principle, that those properties do not belong to things in themselves. To deny the knowability of that which is virtually defined as the unknowable is at once good sense and good philosophy; to deny the reality of the specific differences of objects is mere nonsense. While he could not without palpable absurdity make substance an object independent of intelligence, or an abstract relation to consciousness, Kant is surely right in saying that every real object exists for us only because we have by the constitution of our intelligence the capacity of relating the specific differences of things to a single universal self, and determining them in relation to time as a unity.

It should not be difficult, after these considerations, to show that substance is not a perception, or phenomenal thing, as Mr. Balfour strangely supposes Kant to be compelled to affirm. A substance is neither a mere substratum, nor a mere relation, but the unity of the manifold of sense as related to the schema of the permanent, which again is relative to the category of substance, one of the functions of thought. Perception, in the critical sense of the term, is not the apprehension of an independent object, but the constitution of that object as a known reality. A schematized category cannot be identified with a mere feeling or perception, but is the condition without which there could be no perception whatever. In perception as the knowledge of a real object, there is implied the co-operation of sense, imagination, and thought. The whole Critical philosophy in its positive aspect leads up to the conclusion, that an object existing independently of our intelligence cannot possibly be known. Substance is therefore not a perception, in the sense of a simple apprehension, but a condition or law of perception. The manifold of sense must be combined in one time, and as it is in itself a mere sequence it must be related to that which is not merely sequent but permanent. Thus the "permanent" is implied in the fact that we have perception, but it is not itself a perception. A perception is for Kant always a particular, and the particular, as supplied by the special senses, is detached in its parts, and therefore requires to be united in specific ways. In the present instance the unity of the manifold consists in the relation of it to that which is not evanescent but permanent. Substance can only be said to be an object because it is the universal condition of there being an object for us; it is a relation, because it implies the reference of the changing to that which does not change. To call substance an object *or* a relation is to take one element of knowledge in abstraction from another, without which it is merely a logical abstraction; only in the relation of the particulars of sense to the universal of thought, and of both to time as a unity, can we obtain an explanation of what we mean by the permanence or reality of a known object.

Let us now look at Mr. Balfour's criticism of Kant's proof of the principle of Causality. To this proof two objections are made. (1) If it can be said to prove that sequence in the object is "according to a rule," it is only by showing in the first instance that sequence in the subject is arbitrary; so that the causation proved is at all events not universal. (2) It does not prove, or attempt to prove, that there is actually an objective sequence according to a necessary rule, but only that *if* there is an objective sequence it must be according to a necessary rule, because otherwise it could not be distinguished from the subjective sequence. Now, these are very different propositions; and the second or conditional one might be admitted to its full extent without admitting the truth of the first or unconditional one, which is for purposes of science the supposition of which proof is required.[1]

(1) Mr. Balfour's first objection is that Kant, while pretending to prove that *all* sequences are causal, only proves at the most that *some* sequences are causal; and hence the conclusion is inconsistent with one of the premises. Now, without at present enquiring whether Kant is justified in opposing the arbitrary sequence of our perceptions to the necessary sequence of events, it has to be said that he does not, in the proof of causality, make any attempt to show that *all* sequences are causal. The sequences of which he is speaking are sequences of real events as occurring in the external world. His argument is that, unless intelligence supplied the schema of order in time, under guidance of the category of causality, we could never have experience of an invariable sequence of events in the world of nature. The principle of causality is not "universal," in the sense of being presupposed in any sequence whatever, but only in the sense that it is the

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[1] *Mind*, xii, p. 500

universal condition of all those sequences which we regard as objective, and distinguish from the subjective sequence of our feelings. As I have already said, Kant begins his proof by pointing out that, as a matter of fact, we do draw a strong contrast in our ordinary consciousness between a mere sequence of feelings and a real sequence of events. The former we regard as arbitrary, the latter as invariable. Adopting this distinction, Kant goes on to show that the dogmatist, by virtually reducing both kinds of successions to mere series of feelings, abolishes the distinction between them, and therefore is unable to account for objective successions at all. And observe that the procedure of the dogmatist is not to convert subjective sequences into objective, but, on the contrary, to reduce objective sequences to subjective. But, objects Kant, if we eliminate all objective successions we cannot be conscious even of our perceptions as a series, since there is no longer any reason for contrasting the one with the other. From the dogmatic point of view, therefore, we have as material for the explanation of real events nothing but a "mere play of representations." This argument depends for its force upon the contrast between the dualistic and the critical method of conceiving of the relation between knowledge and reality. Just as Kant argues, in the *Refutation of Idealism*, that when we start from the assumption that real objects are things in themselves, existing apart from our consciousness of them, we cannot even explain how we come to have a consciousness of our own feelings as in time, since a mere series of feelings has no permanent correlate, making it knowable by contrast; so, in the proof of causality, his reasoning is, that the dogmatic assumption of the independence of real objects leaves us with nothing but an arbitrary sequence of feelings, having in them no order or connection, a sequence which cannot even be known to be arbitrary, since there is nothing invariable with which it can be contrasted. While, therefore, Kant does not deny that a series of feelings, taken by itself, is arbitrary, he yet maintains that if we suppose all our knowledge to be reduced to such a series, it is impossible that we could ever have had a knowledge of sequences that are not arbitrary but invariable. It will be observed that Kant does not make any attempt to show that we do have a consciousness of invariable, as distinguished from variable sequences. Any such attempt would in fact be utterly inconsistent with his method of proof, which in all cases consists in reasoning back from the facts of experience to the conditions of knowledge. And surely it would be a very superfluous and absurd proceeding to attempt a proof of the fact that a boat in drifting down a stream occupies each part of the stream in succession. Assuming it to be a fact that we distinguish between such invariable sequences and those which are variable, he asks how this fact is to be accounted for, consistently with the nature of knowledge. It cannot be explained, he maintains, on the supposition that real successions are changes of things in themselves; for the dualism of subject and object leads to the reduction of our knowledge of events to a mere series of feelings, which cannot possibly be identified with an orderly succession of real events. Even granting, therefore, that we could have a consciousness of successive feelings, without bringing them into relation with changes that are not merely successive but invariable, we should still not be able to explain how we come to have an experience of objective sequences. But such a consciousness is impossible, for only in contrast to that which is not arbitrary but invariable can we have the consciousness of our feelings as variable. The gist of the argument against the dogmatic explanation of causality lies in pointing out that the latter overlooks the correlativity of invariable and variable successions. Just as a feeling is knowable only in contrast to the permanent, so an arbitrary sequence of feelings is knowable only in contrast to order in time. Having thus disposed of the ordinary explanation of causality, by taking advantage, as it will be observed, of Hume's reduction of knowledge to a mere association or arbitrary succession of feelings, Kant goes on to show how, from the critical point of view, the experience of an invariable or objective sequence of events may be accounted for. The contrast is no longer, as with the dogmatist, between a succession of feelings in the individual mind, and a series of events without the mind, but between two distinct kinds of sequence both of which occur within consciousness. It is not correct to contrast, without explanation, "sequence in the object," with "sequence in the subject." In one sense *all* sequences as in the subject may be called "subjective." But in the sense in which Kant here uses the term a "subjective sequence" means one that belongs to the individual as such, and therefore one that is not true universally or for all men. And Kant's criterion for distinguishing a "subjective" from an "objective" sequence is that the former is variable and arbitrary, while the latter is invariable and therefore necessary. Mr. Balfour seems to identify "subjective" with "in the mind of the individual," and "objective" with "in the object external to the mind of the individual." But Kant, as I have shown above, expressly cautions us against this mistake. We are not to suppose, he says, that the question is as to things in themselves, *i.e.* objects without the mind; we are to observe that the question is purely in regard to events capable of coming into relation with our consciousness. Now it is difficult to see how the fact that there are subjective, *i.e.* arbitrary, sequences can in any way invalidate the proof that there are objective or invariable sequences, made necessary and universal by relation to the understanding. Mr. Balfour seems to think that because causality is said to be universal it must be applicable to all possible successions. This however is not what Kant attempts to show. His object is to prove that all *real* sequences—all those which we distinguish as changes in the object or in nature—are necessary, and hence that we can say of the principle of causality, that it is applicable *to every possible change in real objects.* That there are sequences which are not changes in real objects, Kant would say, no more invalidates the proof of causality, than the fact that there are permanent or co-existent objects. The principle is necessary and universal in so far as it is applicable. This Kant shows by starting from the admitted fact that we do distinguish between real events and the sequence of our individual feelings. And his contention is, that unless we presuppose a rule of thought making the former possible, we should be compelled to reduce both to a mere series of feelings—in other words, we should never distinguish invariable from arbitrary sequence at all. Kant therefore asks (1) what meaning this invariable sequence has for us on the supposition that all objects have an existence only in relation to consciousness, and (2) what is the justification, if it can be justified, of the affirmation of necessity according to causality of every possible succession of real events. That objects exist only for consciousness he regards as proved in the *Æsthetic*, but he adds here that, on any other supposition, we can have no knowledge of anything real whatever. The affirmation of necessity in the way of causality he justifies by showing that there can be no knowledge of any real sequence, unless we suppose that Understanding, as distinguished from Perception, constitutes *order in time*. For as there could be no order in time, and therefore no real changes apart from Intelligence as synthetic, it follows that, abstracting from the content of any particular succession, we can say: Every possible real sequence is necessary and universal. In other words, in each cognition of a real change there are involved two elements (1) the special content of the sequence, and (2) the universal form, *i.e.* order in time, the schematized category of causality. As therefore the particular is not knowable as an event or real sequence except by the aid of the form of thought, it follows that order in time is the condition of *any* knowledge of a real or invariable sequence. For a form of thought cannot be put off or on at will: it belongs to the essential constitution of intelligence, and hence intelligence can only come into operation in the specific way of determining order in time, in relation to a manifold of perception. There is therefore no inconsistency between Kant's premises and the conclusion he reaches. What he seeks to establish is that our knowledge of real or invariable sequences can be explained only on the supposition that intelligence brings the mere manifold of sense under the schema of order in time, and not otherwise we should have at the most a mere association of feelings, destitute of all order and connection. The contrast of feelings and events is but one phase of the general contrast between objects in space and time, and feelings as passing in time alone.

(2) The second objection advanced by Mr. Balfour is that Kant does not prove, but simply assumes, that there are objective sequences, since he only shows that "*if* there is an objective sequence it must be according to a rule." The answer I should be disposed to make to this criticism has been anticipated in what has just been said. I do not think that Mr. Balfour has properly realized what Kant here means by "objective." Judging from the general tenor of Mr. Balfour's remarks, I should think that by an objective sequence he figures to himself an actual change in a world, the constitution of which is independent of all relation to intelligence. From this point of view, a "subjective" succession is one which occurs within the mind of an individual subject, who is the recipient of feelings produced by the action of a world supposed to exist in independence of all consciousness of it; and an "objective" succession will be one that takes place in the world thus imagined to lie beyond the confines of knowledge. As the series of feelings is assumed to be completely independent of the series of events in the real world, the objection naturally arises, that from the former we cannot obtain any knowledge of the latter. How then, it may be asked, is the sequence of events in an objective world, a world that, as defined, is beyond knowledge, to become known at all? Only, it would seem, if we *assume* it to be "objective." In other words, it is not possible to show that there is

any objective sequence except that which we ourselves *imagine*.

I am compelled to suppose that it is in some such way as this that Mr. Balfour regards Kant's view of causality, because I cannot otherwise understand how he should raise the objection, that Kant does not prove but simply assumes the objectivity of real successions. Mr. Balfour can hardly mean to say, that Kant should have proved that as a matter of fact we distinguish sequences that are invariable from those that are arbitrary. Kant, like everybody else, takes this for granted. The point in dispute is not as to the fact of such a distinction being made, but as to the philosophical explanation of that fact. Let us suppose it, then, to be granted, that in our ordinary consciousness we distinguish between the succession of real events and the succession of our feelings, and that we regard the former as invariable and the latter as variable. Now we may oppose the one to the other as a change in objects without the mind as compared with a change of feelings within the mind, and the one change we may call "objective," while the other we may call "subjective." This is the dogmatic or psychological view, and, unless I entirely misunderstand him, it is the view which Mr. Balfour attributes to Kant. Accordingly it is objected that to contrast an "objective" with a "subjective" sequence as the invariable or necessary to the variable or contingent, is only to make the tautological judgment: "An objective sequence must be according to a necessary rule." The objection is undoubtedly pertinent, if Kant opposes objective and subjective, not only as invariable and variable, but as a sequence *without* the mind to one *within* the mind. For as a philosophical theory is by its very nature an explanation of the possibility of knowledge, we are not entitled to assume that which, explicitly or implicitly, denies the possibility of knowledge. But, if we are confined in our knowledge to our own mental states, it is vain to attempt any explanation of the way in which we come to have a knowledge of an "objective" sequence. By definition all objects and all changes of objects are beyond knowledge, and that which is beyond knowledge cannot, of course, be known. The distinction, therefore, between the two kinds of succession must be purely imaginary; or at any rate we can never show it not to be imaginary: it is really a distinction between different states of our own mind, not one between states of our own mind and events lying beyond them. Of what use is it, we may therefore ask, to show that "objective" sequences are invariable in their succession while our feelings are variable so long as the former are only supposed to be "objective?" We can, of course, *suppose* anything we please, but "for purposes of science" we have proved nothing. The sequences with which science deals are not an invariable succession of feelings, but changes in real objects, and prove what we may of the former, we determine nothing whatever in regard to the latter.

Now, the criticism which I have here supposed Mr. Balfour to direct against Kant is thoroughly endorsed by Kant himself. Any one who has followed me so far will at once see that it is just one way of stating the ever-recurring charge that dogmatism, as limited to a mere series of feelings, cannot account for reality at all. The objection of Mr. Balfour is therefore no objection to Kant, but an endorsement so far of the critical position. I say "so far," because the positive aspect of Kant's system is persistently neglected in all Mr. Balfour's criticisms. So far as Kant accepts Hume's demonstration of the impossibility of a knowledge of real objects or real changes, on the dogmatic assumption that thought and reality are abstract opposites, Mr. Balfour is able to follow him; but he loses the thread so soon as Kant goes on to substitute criticism for dogmatism. It is easy to show that it is so in the present instance. To begin with, an "objective" sequence is not distinguished by Kant from a "subjective" sequence as a series of feelings in the individual mind from a series of events in a world lying beyond the mind. This opposition of intelligence and nature Kant summarily rejects, as meaningless and self-contradictory; and not only does he do so in general, but he distinctly does so in the very proof of causality which Mr. Balfour is considering. We are not, he says, to look upon the sequence of real events as a change going on in things in themselves, but as a change in phenomena.[1] Could the ordinary opposition of "subjective" and "objective" be more explicitly denied? Now this denial carries very important consequences with it. Although the ordinary contrast of "objective" and "subjective" must be rejected, there is no reason for rejecting the ordinary distinction of invariable from variable successions; in fact, this is the distinction upon which we must now fix our attention. For as all sequences are alike in consciousness, it is absurd to contrast a series of feelings with real events as the mental with the extra-mental. The question therefore is how the contrast of arbitrary and invariable sequences is to be accounted for. Now it is useless to attempt any identification of a variable series of feelings with an invariable succession of events, for feeling of itself is a mere "manifold," having no unity in itself, and therefore incapable of knowing itself as a series. It is only, in fact, in the contrast of feelings as variable in their succession with events as invariable, that we can have a consciousness of a series of feelings at all. Order in time must therefore be due to our intelligence on its intellectual side. A function of the understanding combining the mere difference of sense in a unity must be supposed. And this function can act only in relation to time, for all sequences are in time. It is therefore only in relation to intelligence as bringing the manifold of sense under the schematized category of order in time, that the knowledge of an invariable succession is possible for us. Every real sequence is therefore *ipso facto* a universal and necessary one. For if it is true that before we could have a knowledge of any real change intelligence must have been silently operating, we are entitled to say, that no sequence has been or can be known to be invariable which is not brought under the category of causality. The ordinary objection to the universality and necessity of the principle of causality falls to the ground, when it is shown that even a single invariable succession of one event on another tacitly involves the connection with each other of all events that can ever possibly be experienced. It can no longer be said, as the empiricist does say, that we cannot go beoynd the general proposition, that all the events we *have* known were uniformly sequent; for as no sequence *could have been* known as uniform apart from the activity of intelligence, so none ever *can be* known as uniform except in relation to the same activity. A uniform sequence, in short, is one which is necessary and universal. Hence, even prior to the definite experience of particular events, we are entitled to say, that when we *do* have such experience, it must be of events connected according to the principle of causality. We cannot of course anticipate what those events may be, but we can affirm, universally and necessarily, that no change in knowable objects can take place which is not conditioned by a prior change.

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[1] "Were phenomena things in themselves, no man could possibly guess, from the sequence of his ideas, how the manifold may be connected in the object, &c." *Kritik*, p. 175. Cf. *Prolegomena*, § 27, p. 87.

The rest of Mr. Balfour's criticism is directed against what he calls Kant's second proof, which goes on the supposition that *all* sequences are causal, and attempts to show that, in Mr. Caird's words, "the judgment of sequence cannot be made without presupposition of the judgment of causality."[1] I shall not examine Mr. Balfour's objections to this argument, for, after the most careful examination of Kant's words, I am unable to see that it is really contained in the proof of the Second Analogy. For the supposition that it is, Mr. Balfour, of course, is not responsible, and he even hints that "some doubt might perhaps be thrown on whether Kant intended formally to put it forward as a proof at all." In this particular case, I think that Mr. Caird's desire to make Kant consistent with himself has led him to find what does not really exist. Inconsistent as it is with his general theory of knowledge, there is little doubt that Kant does hold that we can have a consciousness of a mere series of feelings, although only in contrast to the objective sequence of events. This, as Mr. Caird himself points out, is one of the instances in which Kant has insufficiently liberated himself from the psychological point of view. For, however true it may be that, looking at the temporal phases of our knowledge, we seem to have a mere series of feelings, detached from all relation to real objects and events, it is not true that any mere series of feelings can be known apart from the relations by which the world is constituted for us as real. Kant, however, undoubtedly distinguishes between our perceptions as occurring in an arbitrary order, and real sequences as occurring in a fixed or unchanging order, and this distinction he makes the starting-point of his proof of the principle of causality. He does not, therefore, attempt to show that *all* sequences are causal, but only that those are causal which we ordinarily regard as occurring in an invariable order. Mr. Caird does not, perhaps, sufficiently distinguish between Kant's facts and his philosophical proof. Thus, it is plain that in contrasting the case of a boat drifting down stream with the perception of a house, Kant is simply referring to the way in which we ordinarily distinguish an invariable or causal sequence from a variable or arbitrary one. Both are perceptions or apprehensions, in the ordinary sense of the term, and both, when viewed from the critical point of view, involve categories: the one the category of causality, and the other the category of quantity. So far as perception goes, both are merely arbitrary, and therefore subjective, but the former involves the category of causality, while the latter does not. Limiting his attention entirely to the question of real sequences, Kant asks how these are to be accounted for, consistently with the nature of our intelligence; and he answers that we should never in our ordinary consciousness distinguish between objective and subjective sequences, were it not that we apply in the former case the category of causality while in the latter we do not. He does not, therefore, say that we can have no knowledge of any sequences except those that are causal, but merely that we should never distinguish fixed from variable sequences, but for the reference of that manifold of sense, which we find by an analysis of the knowledge of real changes, to the one supreme self as applying the function of causality by the aid of the schema of order in time. This he regards as a sufficient answer to Hume, because Hume's denial of real sequences rests upon the supposition that all changes in the world occur in things in themselves lying beyond consciousness. No doubt it is only in keeping with Kant's general system to say that in the observation of a house there is a causal sequence implied in the movement of the eye. But such a sequence, it must be observed, is just as much in the object known as the drifting of a boat down stream, since the eye as moving is a material thing in space, and therefore distinct from the series of feelings of which it is the organic condition. The real difficulty in Kant's discussion of causality lies in the assumption that there can be in consciousness a mere series of feelings, and, as Mr. Caird points out, in the separation of causality from substantiality. The former imperfection arises from the intrusion of a psychological consideration into a purely critical or metaphysical investigation ; the latter, from Kant's method of taking up one phase of knowledge after another, and considering it by itself; but both are instances of the imperfect development of Kant's thought, and cannot be got rid of except by a remodelling of his system.

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[1] *Mind*, xii., p. 501. Cf. Caird's *Philosophy of Kant*, pp. 454 ff.

Although I cannot accept, without modification, Mr. Caird's view of the proof of causality, I entirely agree with him in holding that that proof goes on the principle that no real sequence can be known at all unless we suppose thought, in conjunction with the schema, to co-operate with sense. And hence I am compelled to reject unreservedly Dr. Stirling's explanation and criticism of the proof of causality. That criticism is very much the same as Mr. Balfour's, and rests, as it seems to me, on a like misapprehension of what Kant's theory really is. According to Dr. Stirling, Kant has two ways of satisfying himself that the principle of causality is a necessary and universal truth; or rather, he has a less and a more explicit statement of his proof, the former being contained in the *Critique*, the latter in the *Prolegomena*. Both in the Second Analogy and in the Prolegomena, he argues that the connection of antecedent and consequent is a rule of judgment which the understanding applies to certain objects given independently by perception. In other words, Kant holds that we first have by perception the knowledge of events simply as events, and only afterwards proceed to apply to these the category of causality schematized as order in time. Thus, we have by perception a knowledge of the fact that a stone grows hot, and we have also a knowledge of the fact that the sun shines on it. This knowledge perception gives us before understanding, in this special case, has come into operation at all. But having a perception of these two facts, and having in our minds the category of causality, we recognise that here is a case in which that category is applicable, and so we judge, universally and necessarily, that the sun warms the stone. The first judgment, which precedes in time (and not merely logically) the second, is a judgment of perception; the other is a judgment of experience or understanding.

Kant in the Second Analogy does not distinctly say this, because he had not got his theory into a perfectly clear form before his own mind; in fact, he was evidently, as the prolix and confused proof of the Second Analogy shows, not satisfied himself with his proof; but at last in the *Prolegomena* he had, after long meditation and perplexity, got the thing into a clear form, and settled down in contentment with his distinction of the judgment of perception and the judgment of experience.

Now to this proof of causality, Dr. Stirling objects that it is no proof at all, but a pure assumption. For how are we to know *when* to apply the principle of causality? If there is no necessary sequence in the perception of the facts or events connected, what right have we to say that they are connected? The sun warms the stone, but for aught we can show to the contrary, the stone might warm the sun. Unless, in short, we had in perception the knowledge of real sequences, we should not be entitled to say that there is any *causa nexus.* "Did not sense itself, namely, offer material irreversible sequences, the category of cause and effect would be null and void; it would never be called into play at all; for it is only on reception of an irreversible first and second that the logical function of antecedent and consequent will consent to act—will, on plea of analogy, consent to receive such first and second into its own necessary nexus."[1]

I should like preliminarily to remark here, that Dr. Stirling's reconstruction of Kant's psychological state in writing the Second Analogy and the Prolegomena, I regard rather as complimentary to Dr. Stirling's power of imagination, than as based upon any real evidence. As a matter of fact Kant is so far from having any doubt of the validity of his proof of causality as given in the *Critique*, that he expressly draws attention to the proof of the analogies of experience as an evidence of the triumph of the transcendental method.[1] Dr. Stirling here attributes to Kant a feeling of dissatisfaction felt only by himself. As to the main issue, I should feel compelled to endorse Dr. Stirling's criticism of the proof of causality, were it not that I believe it to rest upon a misconception. I do not believe that Kant regards perception, when understood in the critical sense, as giving a knowledge of separate events, which are *afterwards* externally brought under the rule of causality. So far from this being Kant's view, it seems to me to be exactly the view which he wrote the *Critique* to expose. For, the category, when separated absolutely from the perception or experience of events, becomes merely a conception in the mind. On the one side we have a perception of real objects, on the other side a category, but there is no reason whatever why the one should ever come into connection with the other. Now Kant argues, over and over again, that out of a mere conception we can get nothing but an analytical proposition, a proposition that cannot be shown to have any application to real objects or events at all. His view, as I have tried to state it above, is not that perception gives a knowledge of real events as separated from each other and not perceived to be in any order, but that, if we say perception is the sole source of knowledge we cannot account for our experience of real sequences at all. Dr. Stirling, although he elsewhere almost fiercely insists upon it, does not here take into account the fact that Kant always presupposes the facts of ordinary knowledge, and merely endeavours to point out the elements implied in them. The relation between the understanding and perception, so far as the critical point of view is concerned, is a relation of logically distinguishable, but really inseparable, *elements* of knowledge, not of two different *kinds* of knowledge. "It is universally admitted," says Kant in effect, "that we have experience of the real sequence of particular events. This I assume as a fact, and proceed to account for it. Now I deny that we can know any objects except those coming within consciousness, and referred to a single self. But if we seek to account for real sequences from mental states coming one after the other, without seeking any aid from a universal and necessary form of thought, we must prove order in events or real sequences simply from the succession of those states. There is, then, no sequence except a purely arbitrary one; for our mental states, apart from a combining or synthetical self-consciousness, have no order in them. In other words, we cannot, unless we presuppose a necessary and universal form of thought, explain how we could ever have had the experience of a real or invariable sequence." So far therefore from holding that perception gives us a knowledge of real events, which are *afterwards* connected by the understanding, Kant argues that we should never have any knowledge of *events* as real at all unless the understanding *had been* at work—although in the first instance only blindly or unreflectively—in constituting the connection of events. Deny the activity of the understanding, and we should not have an experience of change at all. Dr. Stirling, in other words, has converted Kant's distinction of the *logical* elements involved in the knowledge of real sequences into a *temporal* succession of two independent judgments. It is of course true, that from the phenomenal point of view, we do have an experience of real changes, before we, by analysis, express what is involved in that experience in the form of a reflective judgment. Hence we *may* say, that we *first* have a perception or experience of events as separate, and *then* discover the rule under which these are subsumed. But, as Kant expressly says, the analytical judgment presupposes the synthetical: we could not by analysis *find* the judgment of causality, were it not that, from the constitution of our knowing faculties, we had previously *put it there.*

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[1] *Journal of Speculative Philosophy*, xiv. 78.

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[1] *Prolegomena*, § 27, p. 86. Cf. § 28, p. 88.

Dr. Stirling would perhaps reply by pointing out that we have experience of real successions that are not causal. That of course is true in a sense, and it was hardly necessary for Dr. Stirling to display so much erudition in proving it. But a real succession means for Kant a sequence of events following each other in an invariable order. Day and night certainly follow each other, and yet they are not causally connected. But Kant nowhere attempts to prove, as Dr. Stirling himself admits, why we in special cases distinguish one sequence as invariable and another as variable: he simply accepts the fact. And what he says is, that such a sequence as day and night is not a real change in the sense that we suppose the one to follow from the other: we can in fact easily see that here the order is only in our perceptions, and hence it is arbitrary or subjective. No doubt the succession of night and day implies that there is a causal sequence somewhere, but it is not such that night is the cause of day.

That supposition is at once nullified by the fact that if night follows day, so also day follows night, whereas in every causal succession event A must go first and event B must come second. The problem is: granting that there are real sequences, how are we to account for them philosophically? Kant's reply is that to know events as really sequent is to know them as already under a rule of the understanding, because otherwise they would not be real, but arbitrary or subjective. But a purely arbitrary succession can never account for any real change whatever; and as no one doubts that there are real changes, this supposition leads to absurdity.

As Dr. Stirling interprets Kant's doctrine of causality by the rule of contrary, his criticism must be regarded not as overthrowing but as supporting it. "Did not sense itself," he says, "offer material irreversible sequences, the category of cause and effect would be null and void: it would never be called into play at all." Sense, in other words, does not give us merely an arbitrary succession of events, but implies the ordering of events under the category of causality. Now if we take "sense," as used by Dr. Stirling, to mean what Kant calls "experience," the view here expressed is identical with that which it is supposed to overthrow. For, any experience of a real sequence involves at once the category and the manifold to which it is applied. There can therefore be no knowledge of a real sequence apart from the activity by which thought combines events in an irreversible order. Reasoning back from any instance of an irreversible series of events, we are compelled to grant that the knowledge of such a series presupposes the category of causality, *i.e.* the combination of events in one invariable order. The perception of change, like all other perceptions, is a judgment, although it need not be an explicit judgment; and it is because a judgment is presupposed in it that we can by philosophical analysis show it to be there. If Dr. Stirling should still object that even on the interpretation of his theory which I have given, Kant after all *assumes* an irreversible sequence, I can only answer, in the first place, that so also does Kant's critic, when he tells us, that sense "offers material irreversible sequences," and, in the second place, that philosophy, as I understand it, does not seek to originate facts, but only to give a self-consistent explanation of them.

CHAPTER VIII.

THE METAPHYSIC OF NATURE.

WITH the Principles of Judgment ends the purely positive part of the *Critique*, as consisting of a systematic discussion of the *a priori* conditions of knowledge, or, what is the same thing, of the pure elements of knowable objects. The universal relations of subject and object, as presupposed in all knowledge of reality, have been brought to the light and considered in their connection with each other. The various elements implied in knowledge are, as we have seen, at the one extreme the "I," as the supreme condition of any knowledge whatever, and at the other extreme the manifold of sense, supplying the concrete differences of things; while intermediate between these extremes are the categories as specifications of intelligence, in so far as it is capable of reducing the particulars of sense to unity, and the schemata as universal ways of bringing those particulars, in relation to time, under guidance of the categories. The synthetic process by which intelligence constructs for itself a world of objects by operating upon the manifold of sense, has been explained generally in the principles of judgment. So far, however, subject and object, intelligence and nature, have been considered in their most general aspects, or, otherwise stated, "nature" has been regarded as a system of universal laws underlying and making possible the world of nature as a whole, not as nature in the more specific meaning of the universal laws of matter presupposed in the totality of material or corporeal objects. Kant, however, has a special treatise[1] in which he sets forth the metaphysical principles of the science of nature, showing how intelligence, as operating upon the manifold of sense, gives rise to the world of matter. The manifold of sense is now specified as the manifold of matter, or rather as the sensible "material," by operating upon which material objects become known. The Metaphysic of Nature, then, contains those principles which are the product of the schematized categories, as applied to a definite manifold of sense, the material world. The schematized categories are the condition of any knowledge whatever; but these, when brought to bear upon material objects in space, give rise to a special branch of metaphysic, a sort of applied metaphysic, bearing some such relation to pure metaphysic as applied logic is usually supposed to bear to pure formal logic. In this applied metaphysic we do not indeed concern ourselves with the special laws of science, or the definite properties of things; but neither do we concentrate our attention solely upon the conditions of knowledge. Taking external objects in their universal or abstract relations, we set forth the universal laws which underlie them. Here, as always, the Categories supply the guiding thread, by following which, as we may be sure, no aspect of the world of nature will be overlooked. Matter must therefore, in accordance with the four classes of categories, be considered in respect of (1) quantity, (2) quality, (3) relation, and (4) modality. Now, matter, looked at in its simplest aspect, is definable as that which is *capable of motion* in space; defined more specifically, it is that which *occupies* space; still more determinately, it is that which in moving possesses *moving force;* and, lastly, in relation to the knowing subject, it is that which, as capable of motion, may be *an object of experience.* The Metaphysic of Nature thus divides up into four parts:—(1) *Phoronomy,* the metaphysic of motion; (2) *Dynamics,* the metaphysic of matter; (3) *Mechanics,* the metaphysic of force; and (4) *Phenomenology,* the metaphysic of external experience. I propose to give the substance of this Metaphysic of Nature, both because it is practically the concrete for the abstract of the *Critique,* and because I desire to compare it with the views of matter, motion, and force held by Mr. Spencer, whose theory may be taken as representative of all that is most valuable in the empirical philosophy of nature of the day. The progress of physical science, and especially of biology, has brought us to that point at which the relations of the various branches of knowledge to each other demand to be settled, and has re-opened the problem as to the ultimate principles on which the special sciences rest. A comparison of the conclusions reached by such a writer as Kant, at once a specialist in natural philosophy and one of the greatest philosophers of any age, with those of a writer like Mr. Spencer, who has a firm grasp of the special principles of science as well as of the philosophy which he represents, ought to be instructive, and will at least bring out into greater clearness the points of difference between criticism and empiricism.

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[1] *Metaphysische Anfangsgründe der Naturwissenschaft*, Werke IV. pp. 357-462 (ed. Hartenstein, 1867).

1. Matter determined in its simplest aspect as "that which is capable of motion in space," is the object of *Phoronomy*. It need hardly be said that the specific properties or relations of the various kinds of material bodies—solid, liquid, and gaseous—do not fall under consideration of any branch of metaphysic, but are dealt with by the special sciences. In Phoronomy, however, we abstract not only from these properties, but from the causal connection of bodies in relation to each other, and even from the quantity of matter as such, *i.e.*, from mass, and concentrate our attention on the *motion* of a body, as a property belonging to it in virtue of its mere existence in space. Matter may therefore so far be treated as if it were simply a point, endowed with the capacity of marking out a given space in a given time. And the sole determinations of a moveable point, as abstracted from the mutual action of forces on each other and from mass, are *velocity* and *direction*. The task of Phoronomy, therefore, is to determine the universal relations of motion as specified in velocity and direction—in other words, to construct the quantitative relations of motion as such. Now, the category of quantity is schematized as number, or the successive addition of homogeneous units; and as nothing is homogeneous with motion but motion, the purely quantitative consideration of matter yields simply the composition of motions in respect of velocity and direction.

Matter, then, in its simplest aspect, is defined as that which is capable of motion in space. Space, however, must be distinguished on the one hand as *relative* or *material*, and, on the other hand, as *absolute* or *pure*. There is no question here as to the relation of space to our faculty of knowledge. It may, however, be repeated that space is not a thing in itself, or any relation of things in themselves, but is a form belonging to our faculty of perception. Here, however, we look at space, not in relation to our intelligence, but as an object of knowledge, and hence as a form of the external or material world. When, therefore, we speak of absolute space, it must not be supposed that we refer to a space in itself, a space independent of our knowledge, and therefore not capable of being experienced. Absolute space is simply pure or indeterminate space, conceived of as that in which relative or determinate spaces are contained. Any determinate space marked out by the presence of material bodies, is a space, which is conceived of relatively to a wider space embracing and containing it. This second space may again be conceived of as embraced by a still wider space, and so on to infinity.

These considerations have an important bearing on the conception of motion. A space taken in abstraction from a wider space embracing it is not knowable at all; and hence it can neither be said to be at rest nor to be in motion. But the motion of matter is a motion which is capable of being known; and hence motion can take place only in empirical or relative space. Now, if we take any given space, and bring it into relation with a wider space embracing it, we can see that motion is purely relative. Thus, a body which moves relatively to the space in which it is perceived must be regarded as at rest, if we suppose this space to move in a wider space, with the same velocity as the body, but in a contrary direction. Space in itself, or motion in itself, is therefore an absurdity. Absolute space is just the negation of a determinate space. We can always conceive a space beyond a given space without end, but to suppose that pure or indeterminate space is an actual thing is to confuse logical universality with physical universality. So motion in itself is a contradiction in terms, since motion is always relative to the space in which it occurs. Motion must, therefore, be defined as "the change of the external relations of a thing to a given space." The common definition of motion as "change of place" is too narrow, and holds good only of the motion of a physical point. The "place" of a body is in the point constituting its centre, and this may remain at rest while the body itself moves, as when the earth turns on its axis. The definition of motion, however, as the change of relations to external space, is consistent with all the motions of bodies, and emphasizes the fact that all motion is relative. *Rest*, again, must be defined as "permanent presence in the same place." It is not correct to say that rest is simply absence of motion; for the negation of motion as = 0 does not admit of mathematical construction, whereas rest, when regarded as permanent presence in the same place, may be taken as a motion with infinitely small velocity, and therefore as a quantity.

As motion is relative to the space in which it is observed, it is a matter of indifference whether we regard a body as moving in a space which is at rest, or the space as moving while the body remains at rest. When we limit our attention to the space in relation to which a body is regarded as in motion, without viewing it as encircled by a wider space, we naturally look upon the body as moving and the space as at rest; when, on the other hand, we bring the space in which the body is observed into relation with a wider space, we may look upon the space as moving and the body as at rest. And as each space is either in motion or at rest, according to our point of view, we may in all cases of motion, or rather of motion in a straight line, regard the body as moving in a space which is at rest, or the space as moving in an opposite direction from the body, and with equal velocity. Moreover, it is quite legitimate to divide the total motion into two parts, and to suppose the body to have one part and the space to have the other part—although, of course, in a contrary direction.

The quantity of motions viewed in regard to their velocity and direction, is constructed under the guidance of the category of quantity, and the combination of any number of motions may be reduced to the combination of two motions, since every synthesis of homogeneous units is a successive addition of part to part. The three modes of quantity are unity, plurality, and totality; and these as pure forms of the understanding must be brought into play in determining the quantity of motion. Hence there are three possible cases. (1) Two motions either of equal or of unequal velocity may take place at the same time in the same direction, the product being a motion compounded of both; (2) two motions, whose velocity is either equal or unequal may take place in contrary directions, while their combination gives rise to a third motion in the same line; (3) two motions, whose velocities are either equal or unequal, may take place in different lines, forming an angle, and their composition will result in a third motion in a line different from either. Thus we have (1) *unity* of line and direction, (2) *plurality* of direction in the same line, and (3) *totality* both of directions and lines—the three possible ways in which motion is determined as a quantum.

2. Assuming matter to be determined in regard to its motion by the category of quantity, we have now to consider how it is still further determined in *Dynamics,* by being brought under the category of *quality,* as that which *occupies space.* In so far as it occupies space, matter may be shown to imply two opposite forces of attraction and repulsion, as essential to its very constitution. But while we have here to consider matter as constituted out of these two forces, we yet regard it only as *imparting* motion in virtue of its inherent forces, not as itself moving and *communicating* motion. In the language of Mr. Lewes, Dynamics, in the Kantian sense of the term, is the science of matter "in its statical aspect," as distinguished from Mechanics, which treats of matter "in its dynamical aspect."

The mere conception of the existence of matter in space does not account for the occupancy of space by matter. A material body can be conceived of as occupying space only when it is regarded as resisting the entrance of any other body, and therefore as endowed with a moving force of its own. A body can enter, or strive to enter, a given part of space, only in so far as it moves. Now nothing can diminish or destroy motion, but motion in a contrary direction; and hence the entrance of one body into the space occupied by another cannot be prevented unless the latter has a moving force, which acts in a direction contrary to the motion of the former. It is only therefore by the possession of a moving force, that a body can occupy space at all.

This moving force is a force of *repulsion,* which may be regarded indifferently as that by which a material body separates another body from itself, or as that by which it resists the approach of another body to itself. And each part of matter must possess a repulsive force, because otherwise matter would not occupy the whole of the space in which it exists, but would only enclose it. As belonging to an extended body in all its parts, repulsion is a force of extension, expansion, or elasticity. And this expansive force necessarily has a finite degree or intensive quality; for a force incapable of increase in intensity, would be one in which an infinite space might be traversed in a finite time, while a force incapable of decrease would be one from which no motion in a finite time could arise, even if it were multiplied by itself to infinity. The expansive force of any material body can therefore be conceived of as increasing or decreasing in intensity to infinity.

An inference from this is, that the space occupied by any material body may always be diminished, since a contrary force can always be conceived, capable of preventing it from expanding itself as much as it would otherwise do. This contrary force may be called a force of *compression*. Now as a force of compression greater than the force of expansion possessed by a given material body can always be conceived, matter is compressible to infinity. On the other hand, however great it may be, the force of compression must have a finite degree of intensity, and hence matter although *infinitely compressible*, is yet *impenetrable—i.e.*, its occupancy of space cannot be absolutely destroyed. Moreover, as the essence of matter consists in the possession of an expansive force proceeding from each point in all directions, the smaller the space into which a body is compressed, the greater must be the force by which it strives to expand itself. The impenetrability here spoken of, which always increases in proportion to the degree of compression, may be called *relative* impenetrability, and the occupancy of space which it presupposes may be called the *dynamical* occupancy of space. *Absolute* impenetrability rests upon the presupposition that matter is absolutely incompressible, and the occupancy of space corresponding to it may be called the *mathematical* occupancy of space. The mathematical conception of impenetrability goes on the supposition that matter is in its ultimate nature not only *impenetrable*, but *incompressible*. It is argued that only in so far as there are empty spaces between its parts is a material body compressible at all; and hence impenetrability is explained by supposing each atom of matter to be absolutely impenetrable, *i.e.*, incompressible.[1] Such absolute impenetrability Kant regards as a *qualitas occulta*. No cause is assigned of impenetrability, but it is virtually asserted that matter is impenetrable just because it is so; in other words, the absolute impenetrability of matter is a pure assumption, resting upon an abstraction from that moving force without which matter cannot be conceived as occupying space at all.

The conception of matter as possessing by its own nature a repulsive force, is free from this objection; for although we can give no reason why such a force should exist, we can yet explain by it why a material body offers a certain degree of resistance to any other material body which tries to displace it. When we see that matter is compressible to infinity, inasmuch as we can always conceive of a greater contrary force as brought to bear upon it, we also see that by the occupancy of space we must understand a relative, and not an absolute, impenetrability.

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[1] Matter, in other words, is composed of ultimate atoms—the "hard" atoms of the physicist.

We have seen that impenetrability arises from the fact that each part of a material body is endowed with an expansive force, by which it is able to repel or remove to a distance the parts of any other material body. Now, the space occupied by matter is mathematically divisible to infinity, although its parts are not really separable. Each part of matter occupying space, on the other hand, is moveable or separable in virtue of the repulsive force with which it repels all other material parts, and is in turn repelled by them. As each part of space is divisible to infinity, so also is each part of matter which occupies space. And the divisibility of matter means the physical divisibility of its parts. Each part of matter may therefore be regarded, like each material body, as a material substance divisible to infinity; for a material substance is definable as that which is moveable in itself.

This proof of the infinite divisibility of matter overthrows the theory of the *monadists*, who suppose matter to be composed of indivisible points, and to occupy space purely in virtue of its repulsive force. On this view, while space and the sphere of activity of a substance is divisible, the substance itself, which occupies space and manifests force, is not divisible. But, as has been shown, there is no point in an occupied space which is not capable of being regarded as a material substance endowed with repulsive force, and as itself moveable, because capable of being acted upon by other repulsive forces. This may be still further shown in the following way. If we suppose any monad, with a given sphere of activity, to be placed at a certain point; then, as space is divisible to infinity, we can suppose an infinity of monads to occupy a position between the first monad and the point to which its resistance extends. Each of these, as possessed of a force of repulsion of its own, and as repelled by the other, must be moveable; and hence there is no part of space occupied by matter which is not moveable—in other words, each part of matter is a substance endowed with a moving force. Matter, therefore, is not indivisible, as the monadist supposes, but infinitely divisible.

Observe, however, that when matter is said to be divisible to infinity, it is not meant that it is made up of an infinite *number* of parts, as the dogmatic philosopher maintains. Divisibility is not identical with dividedness. If space and matter were things in themselves, we should indeed have to admit either that matter is composed of a finite number of parts, or that we have no knowledge of it. But when we see that matter in space is not a thing in itself but a phenomenon, we can also understand how it may be divisible to infinity, and yet may not be composed of an infinite number of parts. A phenomenon exists only in relation to our thought of it, and hence matter is divided just in so far as we have carried the division. The mere fact, therefore, that we can carry on the division to infinity, does not show that there is in a material body actually an infinite number of parts. Nor can we affirm that the parts of matter are simple, because these parts, as existing only in relation to our consciousness of them, are given only in the process by which they are divided or mentally distinguished. Matter, therefore, is not composed of parts which exist as simple in a thing external to knowledge, but of parts determined as such in the process by which matter is known as divisible.

It has been shown that without impenetrability there could be no occupation of space at all, and that impenetrability is just the capacity by which matter, in virtue of a moving force, extends itself in all directions. A force of extension, however, cannot of itself account for the existence of matter as having a definite quantity. In the first place, there is no absolute limit to extension in such a force itself; and, in the second place, there is nothing in the nature of space to prevent the infinite expansion of matter; for the intensity of the force of extension, while it will no doubt decrease as the volume of matter expands, can never sink down to zero. Apart, therefore, from a force of compression acting contrary to the force of repulsion, matter could have no finite quantity in a given space, but would disperse itself to infinity. Nor can the limiting force of one material body be found in the repulsive force of another material body, since the latter also requires a force of compression to determine it to a finite quantity. Besides the repulsive force with which a body is endowed, we must therefore suppose it to have a force acting in the opposite direction—*i.e.*, a force of *attraction*. And this force, as essential to the very possibility of matter, can not be peculiar to a certain kind of material body, but must be universal. Both the force of repulsion and the force of attraction are therefore essential; for while by the former matter would disperse itself to infinity, by the latter it would vanish in a mathematical point. If merely a force of attraction were to act, the distance between each part of matter would be gradually lessened until it disappeared altogether, since one moving force can only be limited by a moving force contrary to it. These, it may be added, are the only ultimate forces; for as matter, apart from its mass, may be considered as a point, any two material bodies must either separate from, or approach to, one another in the straight line lying between them; and the motion of separation is due to repulsion, the motion of approximation to attraction.

Matter, then, is constituted by the two opposite forces of repulsion and attraction. There is, however, an important distinction between the mode of operation of these forces. Repulsion acts only by physical contact, attraction only at a distance. (1) *Physical* contact must be carefully distinguished from *mathematical* contact. The latter is presupposed in the former, but the one cannot be identified with the other. Contact, in the mathematical sense, is simply the limit *between* any two parts of space, a limit which is not *contained in* either of the parts. Two straight lines cannot in themselves be in contact with each other; but if they cut each other they meet in a point which constitutes the common limit between them. So a line is the limit between two surfaces, and a surface the limit between two solids. Physical contact, on the other hand, is the mutual action of two repulsive forces in the common limit of two material bodies, or the reciprocal action constituting impenetrability. (2) Attraction never acts by physical contact, but is always *actio in distans*, or action through empty space. For, as has been shown, a force of attraction is essential to the determination of any given material body as to intensive quantity, and this force must act independently of the physical contact of bodies—*i.e.*, through empty space. To the conception of attraction as action at a distance, it is commonly objected that matter cannot act *where it is not*. How, it may be asked, can the earth immediately attract the moon, which is thousands of miles distant from it? To this Kant replies that matter cannot act *where it is*, on any hypothesis we may adopt, since each part of it is necessarily *outside of* every other. Even if the earth and the moon were in physical contact, their point of contact would lie in the limit between the two parts touching each other, and therefore each part, to act on the other, must act *where it is not*. The objection, therefore, comes to this—that one body can only act on another when each repels the other. But this makes attraction absolutely dependent on repulsion, if it does not abolish attraction altogether—a supposition for which there is no ground whatever. Attraction and repulsion are completely independent of one another, and are alike necessary to the constitution of a material body.

As the forces of repulsion and attraction act respectively by physical contact and through empty space, they may be further distinguished as *superficial* and *penetrative*. (1) Each part of a body, as occupying space, is endowed with a force of repulsion, by which it repels and is itself repelled. The parts are in physical contact, and each sets a limit to the expansion of the other in space, and is itself in turn limited by the other. It is therefore impossible for one part of matter to repel another, unless the two are in immediate physical contact. Hence repulsion acts only at the surface of matter. (2) The force of attraction, again, does not act by physical contact, but at a distance. By the possession of attraction a body does not *occupy* space, but simply *exists in* space. without limiting any other body to a definite part of space. Accordingly, attraction is not affected by the interposition of any number of bodies; in other words, it is a penetrative force, which is always proportional to the quantity of matter. It follows from this that the force of attraction extends through the spaces of the world to infinity. For as attraction is essential to the constitution of matter, each part of matter acts invariably at a distance. If we suppose that there is a definite limit beyond which attraction ceases to act, we must account for this limitation either from the nature of the matter lying within this sphere of activity, or from the nature of space. The former supposition is inadmissible, for attraction is not affected by the interposition of any number of material bodies. The latter supposition is equally inadmissible; for distance in space, while it decreases the intensity of attraction in inverse ratio, cannot reduce it to zero. There is therefore nothing to hinder attraction from extending through space to infinity.

In conclusion, the relation of the dynamical conception of matter to the categories of quality, under which it stands, may be pointed out. The various modes of quality are reality, negation, and limitation. (1) The *real* in space is matter, as occupying space through its impenetrability or repulsive force. (2) The force of attraction, which, if acting by itself, would reduce matter to a mathematical point, or, in other words, absolutely destroy it, comes under the category of *negation*. (3) The reflection of attraction on repulsion, by which the quantity of matter is determined to a finite degree, is the subsumption of matter as occupying space under the category of *limitation*.

3. The final determination of matter is made in *Mechanics*, in which matter is defined as "that which

has moving force, in so far as it is itself moveable." In Dynamics abstraction is made from the actual motion of a material body, and no properties of matter are brought under consideration except those which are implied in the occupation of space by moving forces. This conception of matter, as originally endowed with the forces of attraction and repulsion, is necessarily presupposed in the more concrete conception of matter as actually in motion. For, manifestly, a material body could have no power of communicating motion to another body, were it not itself possessed of original forces: a body could not impress another body, lying in the line of its motion, with a motion equal to its own, did not both possess originally a force of repulsion; nor could one body cause another to move towards it were not both originally endowed with a force of attraction. In Mechanics (in the metaphysical sense) the determination of matter as that which is moveable, in virtue of its original forces of attraction and repulsion, is presupposed, and the further determination of matter as itself moving and communicating motion is made. And as in this final determination of matter the relation of one material body to another in so far as they are contemplated as actually moving is set forth, matter, mechanically considered, is brought under the category of *relation*, in its three phases of *substantiality*, *causality*, and *reciprocity*.

Now, when matter is regarded as itself moving and communicating motion, we can no longer, as in Phoronomy, regard it merely as that which has velocity and direction; nor can we confine our attention to the original forces which determine it to the occupation of space; but we must ask what is the relation between the quantity of matter and the quantity of motion. By the *quantity of matter* is meant the sum of the parts of a body as moveable in a given space. According to the monadists, matter is not composed of moveable parts, but is resolvable into mathematical points, having in their relation to each other a certain *degree* of moving force, in no way dependent upon the number of parts lying side by side, or out of each other. This separation of the degree of moving force from the quantity of matter as a sum of moveable parts is quite inadmissible; for matter has no quantity except in so far as it consists of an aggregate of parts, each outside of the others. These parts, regarded as all moving or acting together, are the *mass* of a body, and a body is said to act *in mass* when its parts move together in one direction and at the same time put forth their moving forces. The quantity of matter must be distinguished from mass. The former is simply any combination of moveable parts; the latter is a combination of moveable parts regarded as acting together in a body. A fluid, *e.g.*, may either act by the motion of all its parts at once, or by the motion of its several parts in succession. In a water-hammer, or in water enclosed in a vessel, and pressing by its weight on a balance, water acts in mass; whereas the water of a mill-stream does not act on the float-board of an undershot wheel with all its parts at once, but with one part after another. To determine the quantity of matter in the latter case, we must therefore find out the quantity of the whole body of water—*i.e.*, that quantity of matter which, in acting with a certain velocity, would produce the same effect. Lastly, *the quantity of motion* is in Mechanics the quantity of matter, or the mass, multiplied by the velocity; not, as in Phoronomy, merely the degree of velocity. Now, it is easy to show that the only measure of the quantity of matter in one body as compared with any other, is the quantity of motion with given velocity. As matter is divisible to infinity, and therefore is not made up of a number of simple parts, we cannot determine the quantity of a body by the direct summation of its parts. It is true that in two homogeneous bodies the quantity of matter is proportional to the quantity of volume; but the former can only be measured by a comparison of either body with others specifically different, and this, again, can only be done by taking the velocity of the bodies compared as equal, and so determining the quantity of motion in each.

When it is said, on the one hand, that the quantity of matter can only be measured by the quantity of motion with given velocity, and, on the other hand, that the quantity of motion with given velocity, is measured by the quantity of matter moved, we seem to fall into a vicious circle, and to leave both conceptions quite indefinite. The reasoning is not, however, really circular, because the conception of the quantity of matter is not identical with the conception of the quantity of motion. In the one case, we regard matter simply as a sum of moveable parts; in the other, we consider this totality of parts as manifesting itself in motion. The quantity of matter is not the quantity of repulsion or attraction, but the quantity of *substance*, definable as the moveable. Alter this quantity, without altering the velocity, and we must also alter the quantity of motion; hence the quantity of motion depends upon the quantity of matter. A substance is that which cannot exist as a predicate, but is conceivable only as a subject; and matter, as occupying space, is a subject which cannot be determined as the predicate of anything else. A material body is defined by its actual motion, not by the quantity of its original forces. Even in the attraction of matter, as the cause of universal gravitation, the attracting body imparts to itself a velocity of its own, which in like external conditions is exactly proportional to the number of its parts, and hence the quantity of matter, although directly measured by the force of attraction, is indirectly determined by the quantity of motion of the attracting body.

We are now in a position to lay down the laws which apply to matter as considered in Mechanics. These laws are three in number, corresponding to the three categories of relation, viz., substance, causality, and reciprocity.

(1) "In all changes of corporeal nature, the quantity of matter remains the same on the whole, being neither increased nor diminished." In the First Analogy of Experience, it was proved that no new substance can possibly come into existence or go out of existence; what has here to be shown is merely what constitutes the substance of matter. Now every material body, and every part of a material body, that can exist in space, is the last subject of all the properties pertaining to matter. And the quantity of material substance is the sum of its moveable parts, as existing in space, or lying outside of one another. Unless, therefore, a new substance could originate, or be destroyed, the sum of the parts of matter constituting its quantity can neither be increased nor diminished. But in all the changes of nature substance neither originates nor is destroyed, and hence the quantity of matter is fixed and unchangeable. This or that material body may change in quantity by an addition or separation of

parts; but the sum of those parts cannot be altered, and hence the quantity on the whole is always the same.

(2) The second law of Mechanics is that "all changes in material bodies are due to an external cause, or, that every body persists in its state of rest or motion in the same direction and with the same velocity, unless it is compelled to alter its state by an external cause." In the Second Analogy of Experience it was proved that every change must have a cause; here it has to be shown that every change of matter must have an external cause. Now the only determinations of matter are those which imply relations to space, and hence all changes of matter are changes of motion. Either one motion alternates with another, or motion with rest, or rest with motion; and of each of these changes there must be a cause. But matter has no internal determinations, and hence every change of matter is due to an external cause. This mechanical law should alone be called the law of inertia (*lex inertiae*). The law that action and reaction are equal and opposite expresses a positive attribute of matter, and is therefore improperly called a law of inertia. When matter is said to be inert, all that is implied is that it has in itself no life, and therefore no capacity of self-determination. Hence inertia is not a positive effort of matter to maintain its state, but simply the impossibility of change except on condition of the action of an external cause.

(3) The third law of Mechanics is that "action and reaction are always equal to each other." In the Third Analogy of Experience it was proved that all external action in the world is mutual. Here our object is to show that this mutual action (*actio mutua*) is at the same time reaction (*reactio*). In estab-

lishing this proposition, Kant makes use of the conception that the motion of a body in relative space is the same thing as the motion of another body, together with the space in which it exists, in a contrary direction. As all motion is relative, to say that a body A moves towards a body B is the same thing as saying that B together with its space moves towards A. If, therefore, A strikes B, we must, to determine the quantity of motion of each after impact, divide the velocity between A and B in the inverse ratio of their mass. In this way Kant seeks to prove the mechanical law that reaction is always equal to action,[1] but his proof need not be given here.

These three laws of general Mechanics might be called respectively the law of subsistence (*lex subsistentiæ*), the law of inertia (*lex inertiæ*), and the law of reaction (*lex antagonismi*). That they exactly correspond to the categories of substance, cause, and reciprocity is self-evident.

4. In *Phenomenology* matter is considered simply in its relation to the knowing subject, and hence it is now defined as that which can be *an object of experience*. What has here to be shown are the conditions under which it may be determined as a knowable object by the predicate of motion. Following the clue of the categories, we must therefore bring matter as moveable under the categories of modality.

(1) "The motion in a straight line of a material body relatively to empirical space, as distinguished from the contrary motion of the space, is *possible*. Absolute motion, on the other hand, is *impossible*." Whether we say that a body moves in a space which is at rest, or that the space moves in a contrary direc-

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[1] *Metaphys. Anfang. d. Natur.*, pp. 441-2.

tion and with equal velocity, in no way alters the character of the object, but is merely a question as to the point of view of the knowing subject. Now, when only an alternative, as distinguished from a disjunctive judgment, can be made in regard to an object, it is left undetermined which of two contrary predicates really applies to it. Hence the motion of matter in a straight line in empirical space, as distinguished from the contrary and equal motion of the space, is merely a *possible* predicate. Again, as motion is a relation, both of its correlates must be known before there can be any real knowledge; and hence motion in a straight line, apart from all relation to an object which moves, and which may be known as moving, is absolutely *impossible*. *Absolute* motion, in other words, cannot possibly be known.

(2) "The circular motion of a material body, in distinction from the contrary motion of space, is actual; whereas the contrary motion of a relative space is not an actual motion of a body, but a mere illusion." In circular motion there is a continual change of motion from the straight line, and therefore a continual origination of new motion. Now, by the law of inertia no motion can originate without an external cause; and by the same law a body continually strives to go on in the straight line touching the circle, and is only hindered from doing so by the contrary action of an external cause. A body which moves in a circle therefore shows itself to be possessed of a moving force. The motion of space, on the other hand, cannot be due to any moving force. Now, the judgment that either a body moves or that its space moves in a contrary direction, is a disjunctive judgment, in which either alternative excludes the other. The

circular motion of the body is therefore actual, and the contrary motion of relative space, as it is inconsistent with the connection of knowable objects, is a mere illusion.

(3) "When one body sets another in motion, an equal and opposite motion of the latter is *necessary.*" This proposition follows directly from the third law of Mechanics. In all communication of motion reaction is equal to action. The motion of the body which is said to be acted upon is as actual as the motion of the body which is said to act. And as the actuality of this motion does not merely rest upon an external force, but follows immediately and necessarily from the relation of moveable bodies in space to each other, the motion of the body moved is *necessary.*

These three propositions, it will be observed, correspond respectively to matter as the moveable, as the moveable which occupies space, and as the moveable which in virtue of its motion has moving force; in other words, to matter as determined by Phoronomy, by Dynamics, and by Mechanics respectively. It is also self-evident that they bring matter under the categories of possibility, actuality, and necessity—the three categories of Modality.

CHAPTER IX.

COMPARISON OF THE CRITICAL AND EMPIRICAL CONCEPTIONS OF NATURE.

THE statement of the main positions in Kant's Metaphysic of Nature, given in last chapter, will enable us to see how the critical conception of the material world differs from the empirical, or, as Kant would call it, the dogmatic conception of it. The world of external nature, like nature in general, is regarded, not as existing independently of intelligence, but as constituted for us by the activity of intelligence as acting upon the external manifold of sense. With this critical explanation of nature, I now propose to contrast the empirical explanation of it as given by Mr. Spencer.

1. It is evident, in the first place, that in determining the various elements which make up our knowledge of the material world, Kant is guided, more or less consciously, by the principle that the true method of knowledge consists in a progress from the less to the more concrete, not in a progress from the more to the less concrete. Absolute space he regards not as more real than empirical or relative space, but simply as a mere "logical universality," an abstraction from any given determinate space. Absolute motion, again, as

he shows, cannot be an object of knowledge; the only motion we can possibly know is that which is relative or determinate. Accordingly, matter is successively determined as that which is capable of motion—as that which occupies space by the forces of repulsion and attraction—as that which in moving communicates motion—and lastly, as that which exists only in relation to our intelligence. That Kant does not always clearly separate between the method of abstraction and the method of determination by more and more concrete elements is no doubt true, as I shall afterwards try to show; but it is equally evident that he emphatically rejects the reduction of concrete knowledge to such thin and impalpable abstractions as space in itself, motion in itself, matter in itself, or force in itself. The world of nature he accordingly conceives as a system of determinate relations, or a "closed sphere," in which each element of reality exists only in relation to the other elements. Space, motion, matter, and force preserve their distinctness, and yet they are not separated from each other by a process of unreal abstraction, but are so connected together as to combine in a concrete universe, in which each element is not only relative to every other, but is likewise relative to intelligence.

Now, the method of Mr. Spencer, unlike that of Kant, *is* a method of abstraction, although at times the opposite method of determination is followed. The contrast between Kant and Mr. Spencer in this respect is, that while the former only drops into the method of abstraction from want of a sufficiently firm grasp of his own principles, the latter deliberately adopts the method of abstraction, and is only inadvertently betrayed into making use of the method of determination. In attempting to justify this charge I shall confine myself mainly to the third chapter of the second part of Mr. Spencer's *First Principles,* which, speaking generally, corresponds to Kant's *Phoronomy.* It does not require very much reflection upon the statements in that chapter to make it apparent that, all through, Mr. Spencer assumes that there is a real universe existing in its completeness in absolute independence of all relation to intelligence. Now, there is no reason to deny that common sense and natural science, in one aspect of them, seem to give the strongest support for this supposition. The ordinary attitude of the plain man is that of a spectator who observes directly before him certain real things and persons that he seems to apprehend as they exist full-formed and complete in themselves. His doubts as to reality, if he have any, do not concern the possible illusiveness of existing things, but only the possibility of misapprehension on his own part. In like manner it is a presupposition of the observations and experiments of the scientific man that the world exists complete in itself, and lies there ready for apprehension. He knows that effort on his own part is the condition of the knowledge of things, but he never supposes that the presence or absence of such knowledge has anything to do with the reality of existence. A philosopher, therefore, who appeals to common sense and to science in support of his assumption that the world is independent of conscious intelligence, has the apparent support of both. But the support is only apparent. Ask the man of common sense, or the scientific man who is innocent of philosophical theory, whether the world he regards as real is not, after all, a world of mere appearances—a world which seems, but is not—

and he can only be made to understand the question by a series of explanations that take him beyond his ordinary point of view, and awaken him, as by a shock, to an elementary conception of the problem of philosophy. Prior to this, he had taken for granted that knowledge and reality are one, and hence it is just as easy to show, by an appeal to common sense and science, that reality is bound up with intelligence, as to show that it is independent of intelligence. The separation of thought and nature—knowledge and reality—does not present itself to ordinary consciousness at all; and hence the empiricist and the idealist may with equal confidence appeal to it, secure of an apparent support. But this simply shows the absurdity of the appeal. Philosophy begins by discerning the possibility of a breach between knowledge and reality, and its task is to show either that they coincide or that they do not. It is therefore utterly unpardonable in a philosopher to begin with the assumption of the independence of reality on intelligence, for such an assumption just means that so far he has not got to the philosophical point of view. Nor is this all, for such a supposition is not only unjustifiable, but it leads to a perverted view of the relation between knowledge and reality, as will appear from an examination of Mr. Spencer's procedure.

Between the first view of the world as a congeries of individual objects connected together by the superficial unity of space and time, and the scientific view of that world as a system of forces, there lies a wide interval during which intelligence has been becoming more and more active—on the one hand observing the infinite complexity of the determinations of things, and on the other hand finding them united by higher and closer bonds of unity. But, as the process by which intelligence developes itself is looked upon by the scientific man, not less than by the man of common sense, simply as a process by which the properties and the relations of objects in a world independent of consciousness are discovered by the individual observer, the correlative evolution of intelligence is neglected. Science finds it necessary to systematize its knowledge by means of the conceptions of matter, motion, and force, but these conceptions are looked upon as purely objective, or independent of thought. In this assumption, science, as such, is perfectly justified, since its task is to point out what are the properties and the relations of things to each other—not to inquire into the relations of knowledge and reality. But he who constructs a philosophical theory may not take up from the special sciences, without criticism, the conceptions they are compelled to use, and proceed to explain knowledge on the assumption of the complete determination of objects independently of intelligence. This, however, is what Mr. Spencer, in the present instance, does. The order his exposition ostensibly follows is to treat first of space and time, then to go on to matter and motion, and to end with force, "the ultimate of ultimates," as he calls it. The real order of his thought, however, is to start from the conception of force, next to go on to motion and matter as presupposed in force, and finally to come to time and space as implied in motion and matter. Now, this just means that he assumes the independent reality of the world as it exists for science, and then proceeds by analysis to get back to the simplest and most abstract elements of that world. The true order is exactly the reverse. The world, as absolutely unthinkable apart from intelligence, presupposes the putting together of more and more concrete elements, so that while space, as the mere abstraction of external individuality, is in the order of thought and of the evolution of intelligence, the abstractest and simplest element of all, force, as comprehending in a more concrete unity time, matter, and motion, is the last and highest conception. The process of abstraction or analysis by which Mr. Spencer gets his results is merely a process by which the intelligible character of the universe is denied, just because it is tacitly assumed.

The next step of Mr. Spencer is to explain how a world already assumed to be known gets into the individual consciousness. The method of explanation is exceedingly simple. It consists in plausibly explaining how a world already known communicates itself to the individual through his senses. The senses are said immediately to reveal objects as resisting, and the feeling of resistance is identified with force. As the conception of force already presupposes the whole process by which it has been arrived at, we thus get, by an act seemingly of the simplest kind, the materials from which motion, matter, etc., may be apparently obtained by analysis, without any synthetic activity of thought whatever. All the elements needed to constitute reality are thus secured beforehand, and we have only to take, at each fresh stage of our progress, as much from the intelligible world as we find convenient. Thus the dependence of real existence upon intelligence is got rid of by the convenient method of assuming beforehand what we pretend to derive by a process of immediate apprehension. Nothing could be simpler, and nothing more useless and delusive, than a method such as this, which, while it pretends to describe the process by which the knowledge of reality is obtained, simply sets forth that which has been tacitly assumed at the outset.

The derivation given by Mr. Spencer of space and time, preparatory to his reduction of all phenomena to force, is, briefly, as follows: "Of those relations which are the form of all thought there are two orders—relations of sequence and relations of co-existence, the former being original and the latter derivative. The relation of sequence is given in every change of consciousness. The relation of co-existence, which cannot be originally given in a consciousness of which the states are serial, becomes distinguished only when it is found that certain relations of sequence have their terms presented in consciousness in either order with equal facility; while the others are presented only in one order. Relations of which the terms are not reversible become recognized as sequences proper, while relations of which the terms occur indifferently in both directions become recognized as co-existences. By endless experiences an abstract conception of each is generated. The abstract of all sequences is time. The abstract of all co-existences is space. Our conceptions of time and space, then, are generated, as other abstracts are generated from other concretes; the only difference being that the organization of experience has, in these cases, been going on throughout the entire evolution of intelligence. The experiences out of which the abstract of co-existence has been generated are the experiences of individual positions as ascertained by touch, and each of such experiences involves the resistance of an object touched, and the muscular tension which measures this resistance. By countless unlike muscular adjustments different positions are disclosed; but since, under other circumstances, the same muscular adjustments do not produce contact with resisting positions, there result the same states of consciousness, minus the resistance, and from a building up of these results space. Similarly in regard to time, the abstract of all sequences."[1]

This passage contains an admirable illustration of that mixture of common-sense realism and individualistic sensationalism which runs through the whole of Mr. Spencer's philosophy, and, indeed, through all empirical psychology. It is really an attempt to combine two discordant views that are not capable of union, and which, therefore, are simply applied to each other without being united, as the surfaces of two chiselled stones may be brought into close contact without being joined together. In our unreflective experience of the world we are as far as possible from supposing that the objects we know can be resolved into our own passing feelings; on the contrary, we tacitly assume that the world *we* know is the world as it really is—the world as known by everybody else. It is no doubt true that we look upon ourselves and others as independent individuals, and that this assumption, when made explicit, leads to the view of sensationalism that the only way in which things are known is through our subjective feelings. We may, therefore, say that common consciousness assumes, indifferently, that the known world is objective and intelligible, and that it is subjective and sensuous; unreflective consciousness, in short, is, implicitly, at once idealistic and sensationalistic, although, explicitly, it is neither the one nor the other. Mr. Spencer's procedure is to accept both the realism—*i.e.*, the tacit idealism of common sense—and its contradictory sensationalism. Accordingly, he does not scruple to speak of relations of sequence and relations of co-existence as if they were given in complete independence of intelligence; and hence the only question, as he puts it, is how the individual comes gradually to appropriate objects through his own particular and perpetually-changing feelings. From this way of stating the question the absurdity of trying to build up a stable universe out of evanescent sensations is concealed both from Mr. Spencer himself and from the unwary reader; because, having an intelligible universe always before their consciousness, they overlook the fact that individual feelings, as unrelated, are in the most absolute sense unintelligible. It is not seen to be a contradiction to identify successive feelings of touch and of muscular sensation with "relations of sequence," and even with "relations of co-existence," although it seems plain enough the moment it is stated that feelings, as such, cannot be "relations" of any kind whatever. Proof of this charge of self-contradiction is so important in itself, and has so decisive a bearing upon the doctrine of force as conceived by empirical psychologists, that a detailed examination of Mr. Spencer's derivation of the conceptions of space and time may be excused.

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[1] *First Principles*, pp. 163-165, § 47.

The "relation of sequence" is primary, because "given in every change of consciousness;" the "relation of co-existence" is secondary, because it "cannot be originally given in a consciousness of which the states are serial." How, then, does the consciousness of co-existence arise? From the fact that "certain relations of sequence have their terms presented in consciousness, in either order, with equal facility, while the others are presented only in one order." Here it is quite evident that Mr. Spencer is trying to explain how we come to experience a world of co-existent and successive objects, conceived in the first place as independent of consciousness. Now, a world in which events are "presented only in one order" is, in other words, a world in which the events are connected in an irreversible or uniform order, *i.e.*, in which they are connected together as cause and effect. Such a world, therefore, is already constituted by universal forms of thought, involving, not only intelligence, but intelligence that has developed itself by very complex relations. And a necessary and uniform sequence of events is very different from the supposed sequence of feelings, as they occur in "a consciousness of which the states are serial." No doubt there is a point of view from which it can be shown that the serial states of consciousness imply a uniform sequence in the way of causality, but such a point of view can be attained only by a philosophy which sets forth, in systematic order, the different elements that conspire to produce a rational universe—a universe that, apart from reason, is nothing; not by a philosophy which assumes the existence of a ready-made universe independent of reason. That Mr. Spencer is committed to the latter standpoint is evident from his attempt to account for relations of co-existence by relations of sequence; and it is still more apparent from the fact that he afterwards explains co-existence as a compound of feelings of touch and muscular sensation. His method, then, is to identify "relations of sequence" with the mere sequence of feelings, in a "consciousness of which the states can only be serial;" and, having thus assumed uniform relations of sequence, the only thing requiring explanation seems to be, how these give rise to relations of co-existence. But a sequence of feelings conceived to occur in a purely individual consciousness is as far as possible from being identical with the objective sequence of real events in an intelligible world. The former is, *ex hypothesi,* not irreversible, but arbitrary; not objective, but subjective. The latter is uniform, necessary, and unchanging, and involves the actual relation of objects as identical in the midst of change, and as necessarily connected with each other. The one excludes all relations, the other involves a complexity of relations. It is, therefore, utterly impossible to extract from the sequence of states, in a purely individual consciousness, any objective order of events; and there is no reason whatever for deriving co-existence from sequence, except the unwarrantable confusion between the causal sequence of events and the arbitrary sequence of individual feelings. And this brings us to remark, secondly, that "relations of co-existence" are not separable from "relations of sequence" in the way assumed by Mr. Spencer. We may distinguish the causal connection of events from the reciprocal influence of co-existing substances, but the intelligent experience of reality involves both. It is not possible to be conscious of events as uniformly sequent, without being conscious of substances as dependent upon and influencing each other; or, to take experience at an earlier stage, it is not possible to think of events as following upon each other in time, apart from the thought of things as co-existing in space. The experience of the one implies the experience of the other; and hence any attempt to get the one without the other is an attempt to apprehend one element of the real world apart from another element that is necessary to make it real. We may certainly ideally distinguish the elements, but in our analysis we must be careful to leave room for such a synthesis as shall exclude all actual separation.

Having plausibly derived relations of co-existence from relations of sequence, Mr. Spencer tries to show that space and time are "generated as other abstracts are generated." The same paralogism of individual feelings and relations of thought again presents itself. We start from the world as given in ordinary consciousness—the world as implicitly rational—and ask how, supposing we have a knowledge of co-existent and successive objects, abstract space and time are produced? There can be no difficulty in giving an apparently satisfactory explanation, because in our *datum* we already have implicitly that which is to be established. Things as co-existent and successive are spatial and temporal, and by simply analysing what is contained in our ordinary knowledge, and abstracting from all the differences of objects, we easily get space and time as residue. Mr. Spencer, in other words, when he speaks here of space, has before his mind space as the object of the mathematical sciences. Now, mathematics does not find it necessary to inquire into the relation of space to intelligence; as a special science it is sufficient for it to assume its object as ready-made, and to examine the various ideal limitations of it from the phenomenal point of view. Mr. Spencer, therefore, has, in his conception of space as the "abstract of all co-existences"—an abstract that is supposed to be obtained by mere analysis of a pre-existent material—a ready means of emptying intelligence of its universal relations. Just as, when he has to account for co-existent objects, he first identifies the mere sequence of feelings with the necessary or objective sequence of events, and is thus able apparently to extract from feeling the conception of permanent substances; so here he assumes that objects as offering resistance are given in feelings of touch, and hence he easily derives empty space from muscular tensions unassociated with feelings of resistance. It is hardly necessary to repeat that individual feelings, however numerous, cannot possibly account for the knowledge of extended things or of extension, since such feelings are assumed to be destitute of that universality which is the condition of any knowledge whatever. Mr. Spencer seems to suppose that, by throwing the supposed experience back into the haze of the past, and imagining a vast period of time to have elapsed, during which the race has been accumulating knowledge, the intellectual elements of experience may be resolved into felt elements. But this is an utterly untenable position. The very beginning of intelligent experience, whether in the individual or in the race, must contain the elements necessary to such experience, and these elements cannot be reduced to lower terms than a synthesis of subject and object, of the universal and the particular. A purely feeling consciousness, assumed to exist for an infinite period of time, is still a feeling consciousness: unless a transition can be made from this unintelligent state, by means of a primary act of abstraction at once separating and uniting the object and the subject, there can be no experience of the world at all, and therefore no experience of the world as spatial. Mr. Spencer really confuses the unreflective consciousness, which does not sharply separate subject and object, or things and space, with a merely feeling consciousness which, as such, is the negation of that separation. But in the former the two terms are really present, and although their contrast is seldom explicitly perceived, it is still there, ready to be brought out by reflective analysis; in fact, were it not implicitly there, no amount of reflection could extract it. It is, therefore, a manifest *hysteron proteron* to account for space as due to mere feelings of muscular tension. In intelligent experience space and time are not posterior, but prior, to co-existing and successive objects, as undifferentiated space is prior to positions—*i.e.*, limitations of space. Mr. Spencer first identifies feelings of muscular tension with co-existing positions—which, as involving relations to each other, are more than feelings—and next assumes that a synthesis of these positions generates space. But position already involves the relation of the parts of space to each other, and hence cannot account for space. In short, just as the co-existence of objects presupposes their relation to each other in space, and therefore different positions, so position presupposes a universal space, which is ideally limited. Space, as Kant says, is not a collection of particular spaces, but a universal space differentiating itself in the particular.

Having found that Mr. Spencer ostensibly derives space and time from mere feelings of resistance, which he unwarrantably identifies with the conception of force, we may expect that in accounting for matter and motion the same fallacious method will be adopted. His account of matter is, briefly, as follows:—"Our conception of matter, reduced to its simplest shape, is that of co-existent positions that offer resistance. We think of body as bounded by surfaces that resist, and as made up throughout of parts that resist. . . . And since the group of co-existing positions constituting a portion of matter is uniformly capable of giving us impressions of resistance in combination with various muscular adjustments, according as we touch its near, its remote, its right or left side, it results that, as different muscular adjustments habitually indicate different co-existences, we are obliged to conceive every portion of matter as containing more than one resistant position. . . . The resistance-attribute of matter must be regarded as primordial, and the space-attribute as derivative. . . . It thus becomes manifest that our experience of *force* is that out of which the idea of matter is built."[1]

Here again we have an illustration of that method of accounting for the intelligible world by ignoring intelligence which Mr. Spencer carries on with great self-complacency, and apparently without the least perception of the real nature of his procedure. "Our conception of matter, reduced to its simplest shape," simply means the real world after we have eliminated by abstraction those prominent elements in it which presuppose an elaborate process of construction by thought. The world as it exists for the scientific man, the world as composed of objects bound together by the law of gravitation, and manifesting physical, chemical, and vital forces, is stripped of all its differentiating relations, and reduced to a congeries of extended and solid atoms, preparatory to the reverse process by which the relations abstracted from shall be surreptitiously brought back and attributed to independent feelings. But, even when nature has been thus attenuated to a ghost of its former self, the attempted derivation of it from feeling is easily seen to be inadmissible. The passage from individual feelings to "co-existent positions that offer resistance," however apparently easy, cannot really be made. We are told of "impressions of resistance," and of "muscular adjustments." Now, an impression of resistance is not a mere feeling, but the conception of an object as resisting, and such a conception involves a construction of reality by relations of thought. Similarly, "muscular adjustments" presuppose a knowledge of the muscular system, or, at least, of the body as it exists for common consciousness, and, here again, relations of thought are inconsistently attributed to mere feeling. If we exclude all that is involved in the relations of a resisting object to the organism as the medium of muscular sensibility, we are reduced to mere feelings which can by no possibility give a knowledge of anything real and external to themselves. Hence the absurdity of assuming that a mere feeling is in itself a theory of matter as the manifestation of force; hence, also, the absurdity of regarding force as the simplest, instead of the most complex, element of the real world as it exists for the scientific man.

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[1] *First Principles*, pp. 166, 167, § 48.

From what has been said it is easy to see why Mr. Spencer regards the "resistance-attribute of matter as primordial, the space-attribute as derivative." It must, at first sight, seem strange that "co-existing positions that offer resistance" should be held to be prior to "co-existing positions" themselves. In the apprehension of resisting positions there is, surely, already implied space. Mr. Spencer, however, identifies his own theory, that resistant positions are revealed by muscular sensations, with the common-sense apprehension of objects, which, like all knowledge, really involves the reduction of particulars to the unity of thought. Hence space, although it is involved in the ordinary apprehension of objects in the same sense in which resistance is involved in it, is assumed by Mr. Spencer not to exist for consciousness at all, because it has not yet been made an object of the abstract understanding. Accordingly, the resistance is abstracted from, and there is left pure space, as it exists for the mathematician. Here the purely analytical procedure of the empirical psychologist is apparent. The world of objects in space is supposed to be given apart from thought, or rather by means of mere "impressions of resistance," and by a further extension of this purely sensible process, the knowledge of space is supposed to be given by feeling, when in reality it is got by a process of abstraction that presupposes the manifold relations of intelligence by which the world has been put together. Mr. Spencer has not asked himself the proper question of philosophy, How is the real world related to intelligence? but, instead, has put a question that presupposes a false abstraction of reality from intelligence, viz., How does the individual man apprehend by his sensations the real world? The true answer to his question is that, by mere sensation, no reality whatever can be apprehended, and the illusion of such apprehension simply arises from confounding sensation as the first unreflected form of knowledge with sensation as a mere abstraction of one element of knowledge. If it be replied that Mr. Spencer does not base knowledge upon mere feelings, but upon "relations," the answer is that the "relations" do not on his view constitute reality, but are only the modes by which the individual consciousness gradually fills itself up with the pre-existent elements of a supposed real world; and hence, that, notwithstanding the use of terms implying more than feeling, mere feelings are, after all, assumed to account for reality.

Mr. Spencer's account of motion is similar in nature to the account of space, of time, and of matter. "The conception of motion, as presented, or represented, in the developed consciousness, involves the conceptions of space, of time, and of matter. A something that moves; a series of positions united in thought with the successive ones—these are the constituents of the idea. . . . Movements of different parts of the organism in relation to each other are first presented in consciousness. These, produced by the action of the muscles, necessitate reactions upon consciousness in the shape of muscular tension. Consequently, each stretching-out or drawing-in of a limb is originally known as a series of muscular tensions, varying in intensity as the position of the limb changes. . . . Motion, as we know it, is thus traceable to experiences of force."[1]

In treating of matter, Mr. Spencer betook himself to the conception of the world as it exists for the scientific man, and, neglecting the manifold relations which form the real wealth of the sciences, he fixed his attention exclusively upon body, conceived as extended and resistant. Now he refers again to his scientific conception of the world, and, fetching therefrom the conception of motion, adds it to the elements he has thus far sought to explain. In this way he gets the credit of explaining the origin of motion without any synthetic activity of thought, while in reality that conception is assumed, and only seems to the uncritical reader to be derived, because immediate feelings and intelligible objects are blended together in the confused medium of popular language.

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[1] *First Principles*, pp. 167, 168, § 49.

Motion is to be explained by feeling, and, for the purpose in hand, muscular tensions are most easily manipulated. "Movements of different parts of the organism," we are told, "are first presented in consciousness." This is an exceedingly facile way of accounting for our knowledge of motion. The "organism" is assumed, and that means that we are already, at the beginning of knowledge, supposed to have such a knowledge of it as is possessed by the scientific physiologist. Hence the manifold relations of real objects to each other, and the differentiation of the human organism from other organisms, and from inorganic bodies, are taken for granted at the very start. That being so, there can be no great difficulty in accounting for the movements of the organism, seeing that these are already implied in our knowledge of the organism itself. These movements, we are next informed, "necessitate reactions upon consciousness." No doubt they do; but the question is whether such "reactions" can possibly be known by consciousness as reactions, supposing consciousness to be identical with feeling. The assumption that this is really the case derives its apparent force from confusing the mere feeling of muscular tension, which is incapable of giving the knowledge of any reality whatever, with the conception of muscular tension as related to a real intelligible world. Hence it seems as if feelings of muscular tension, "known as a series," account for motion in the form of "movements of different parts of the organism." But "muscular tensions," as feelings, can only be supposed to give a knowledge of the movements of the organism, because the conception of such movements, and of motion in general, is taken up without criticism from the special sciences. When we make a real effort to explain motion, we find that it is utterly unintelligible, apart from the other elements to which in an intellectual synthesis it is related.

After what has already been said, it cannot be necessary to show at length that "experiences of force" do not, as Mr. Spencer would have us believe, precede experiences of motion, but, on the contrary, presuppose those experiences. It is only by unwarrantably confusing mere feelings of muscular tension with the muscular tensions themselves, as they exist in a real world, which is, at the same time, an intelligible world, that any one could fall into the mistake of setting down as primary and simple that which involves a long and very complex process of differentiation. Force is, no doubt, presupposed in motion, as motion is presupposed in matter, and matter in time, and time in space; but the implications of the first and simplest form of knowledge are not at first discerned, and, hence, force is the last element in the scientific conception of the world which emerges into explicit consciousness.[1]

2. It will help to emphasize the contrast between Criticism and Empiricism, to compare Kant's proofs of the three laws of Mechanics with Mr. Spencer's way of establishing the indestructibility of matter, the persistence of force, and the continuity of motion.

In the first law of Mechanics, viz., that "the quantity of matter cannot be either increased or diminished," Kant refers back to the proof of the First Analogy of Experience, as given in the *Critique*, where it is proved that in all changes of phenomena substance is permanent, and its quantum neither increases nor diminishes; and he only seeks to apply the conclusion there reached to substance specialized as matter. Now, as we have seen, the proof of the First Analogy of Experience is purely transcendental, *i.e.*, it shows that apart from the reflection of a manifold of sense on the "I" as the supreme condition of synthesis, there could be no knowledge of objects as permanent. According to Kant, therefore, the indestructibility of matter can be proved only by showing that it is implied in the very possibility of knowledge. The manifold of external sense is no doubt given to intelligence, but the fixing of this manifold as permanent is due to the very constitution of the human intelligence. Any attempt to account for the indestructibility of matter by a reference to observation, is, for Kant, an attempt to explain how matter as a thing in itself may be apprehended as permanent, the logical issue of which can only be a denial of all knowledge of matter. From a mere observation of external objects existing apart from all relation to intelligence, the most that can be said is, *that so far as we have observed,* matter is indestructible. But this is very different from the unqualified affirmation that matter *is* indestructible.

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[1] The above remarks on the third chapter of *First Principles* originally appeared, with a few verbal differences, in the *Journal of Speculative Philosophy*, xii., 125-136. The rest of the chapter is almost entirely new.

Mr. Spencer endeavours to show that matter is indestructible in two ways; first, by "induction," and secondly, by "deduction." Both of these proofs involve the contradictory assertions, that matter is immediately known, and that it is known to be permanent or indestructible. (1) The inductive proof is briefly this: Take any substance and find out by weighing it, the number of its constituent atoms; then let it undergo a chemical or physical process of change, and it will be found that the number of constituent atoms is still exactly the same as before. Here we start from the ordinary empirical assumption that a thing, as variously qualified, is given in purely passive observation. The induction itself is further supposed to be a process of passive observation. But, if that be the case, how can we legitimately pass from our particular observations of individual substances to the universal affirmation that matter as a whole is indestructible? As Hume has shown, the mere observation of facts does not entitle us to make any universal judgment; we are confined to the judgment, "This substance, so long as I observe it, remains the same in quantity." But this is not all. For, if the substances supposed to be directly observed, are regarded as existing independently of the relations by which intelligence constitutes them as knowable objects, they cannot even be known to persist through a limited number of moments of time, unless thought combines the scattered impressions they are supposed to excite in us. Apart from such relations of thought, there could be no object at all for us. Now, an object which is known not only as something in general, but as a determinate object, having the attribute of weight, must not only be known as enduring through successive moments of time, but must be determined by the complex relations involved in the conception of it as a gravitating body, whose weight is proportional to its mass. And this takes us far beyond the perception of the moment, to the complex relations involved in the connexion of material bodies with each other. It is only by assuming to start with the permanence of matter as known, and the permanence of its quantitative relations, that Mr. Spencer apparently accounts for the indestructibility of matter from induction or pure observation. (2) The "deductive" proof simply repeats the fallacy of the inductive proof. We may conceive matter to be compressed, it is said, to any finite extent, but we can never conceive it to be compressed into nothing. Now, as Kant points out, there is no difficulty in conceiving —*i.e.*, imagining—any given unit of mass to be reduced in size, so long as we contemplate the mass *per se*, without introducing the conception of weight or force impressed. In like manner, it is perfectly easy to imagine the decrease of the given weight of any mass, so long as we abstract from the mass and look only at the weight. What, then, is inconceivable? Manifestly, the conception of a mass that is not proportional to weight, or of weight that is not proportional to mass. We cannot conceive matter compressed into nothing, because we cannot conceive the compression of nothing. The deductive proof, therefore, asserts universally that mass and weight are correlative and proportional. But, while there is no difficulty in understanding how this proportionality of weight and mass may be known, when we regard these as determinations of objects existing only in relation to intelligence, it is utterly inconceivable how objects which are defined as beyond intelligence, should be known to have these or any other properties. Mr. Spencer therefore, can only assume that these relations are somehow known, and then proceed to "deduce" them. The deduction cannot present any great difficulty, since it is merely a restatement of that which is taken for granted, and taken for granted in defiance of a theory of knowledge that is really a theory of ignorance.

Kant's second law of Mechanics is that all changes in matter are due to an external cause; and in proving this proposition he refers back to the proof of Causality, as given in the Second Analogy of Experience. Kant, therefore, recognizes that the conception of force is simply a special application of the conception of causality, and hence that the persistence of force can only be proved by showing that it presupposes the relation of a special manifold of sense to intelligence. He also shows that force and matter are related as cause and substance, and that the conception which connects the one with the other is motion, which at once determines the changes of matter, and manifests the forces without which no changes in the material world could take place. Thus the indestructibility of matter and the persistence of force are correlative conceptions, neither of which is conceivable apart from the other.

Mr. Spencer, after his usual method, endeavours to reduce the conception of force to the feeling of muscular resistance, and, naturally failing to account for the persistence of force from that which is not persistent, but momentary, he strangely concludes, not that his explanation is imperfect, but that there is an inherent weakness in the human mind, which precludes it from grasping the nature of force as it is "behind the veil." It is especially unfortunate that Mr. Spencer should be driven to this conclusion, because, as he clearly sees, the indestructibility of matter and the continuity of motion cannot be proved unless it can be shown that force is persistent. "The validity of the proofs given," he says, "that matter is indestructible and motion continuous, really depends upon the validity of the proof that force is persistent."[1] And yet Mr. Spencer holds that "the persistence of force is an ultimate truth, of which no inductive proof is possible."[2] "Inductively, we can allege no evidence except such as is presented to us throughout the world of sensible phenomena. No force, however, save that of which we are conscious during our own muscular efforts, is immediately known to us. All other force is mediately known through the changes we attribute to it. Since, then, we cannot infer the persistence of force from our own sensation of it, which does not persist; we must infer it, if it is inferred at all, from the continuity of motion, and the undiminished ability of matter to produce certain effects. But to reason thus is manifestly to reason in a circle. It is absurd to allege the indestructibility of matter, because we find experimentally that under whatever changes of form a given mass of matter exhibits the same gravitation, and then afterwards to argue that gravitation is constant because a given mass of matter exhibits always the same quantity of it. We cannot prove the continuity of motion by assuming that force is persistent, and then prove the persistence of force by assuming *that motion is continuous*."[1] Now if "the validity of the proofs that matter is indestructible and motion continuous really depends upon the validity of the proof that force is persistent," while of the persistence of force no proof is possible, one would naturally conclude that all three are pure assumptions. Mr. Spencer would, of course, reply that here we reach a "principle, which, as being the basis of science, cannot be established by science." It is always easy to maintain that we have come down to an ultimate principle; there is nothing to prevent us, when we find a problem impervious to our method of explanation, from saying that we cannot explain it because it is inexplicable. In a similar way Mr. Mill[2] makes the consciousness of the identity of self a "final inexplicability," when he finds it impossible to explain how a self, defined as an evanescent series of feelings, should yet know itself to be evanescent. It may safely be said that, to a philosophy which has discovered the secret of the explanation of knowledge, there are no "ultimate principles," in the sense of principles which are absolutely inexplicable. The workmanship of the mind in the constitution of knowledge cannot be beyond the ken of knowledge, if only we do not seek for intelligibility in that which by definition is unintelligible. It may very well be conceded that force, conceived of as "some power which transcends our knowledge and conception,"[1] cannot be understood, and it may yet be held that the persistence of force is capable of being proved. Mr. Spencer's difficulty in regard to the proof of the persistence of force is really an unconscious admission of the inherent viciousness of his philosophical method. Separate the conception of force from intelligence on the one hand, and from the correlative conception of matter on the other hand, and there is little wonder that its "persistence" should seem incapable of proof. Force, abstracted from its relations to intelligence, is nothing at all; it is simply the negation of every determinate or knowable attribute of matter. On the other hand force, as it is actually manifested in the known world, may be shown to be persistent from the very nature of that world. It is of course impossible to prove, simply from an examination of the nature of knowledge, anything in regard to the specific objects of knowledge, and therefore anything in regard to the specific forces which constitute the changes in the world. But, starting from the special forces of nature, it may be shown that the knowledge of change is impossible except to an intelligence that connects the particular element in known objects as sequences in time. And this is the nature of the proof which Kant gives of the persistence of force. The changes of matter are changes of that which is distinguishable as having parts that are all outside of each other, and the changes of such parts are of course motions. But a motion, taken by itself, is only conceivable as mere velocity, or the relation of space traversed to time elapsed; and hence from mere motion no explanation can be given of any change in motion. The actual fact that there are changes of matter cannot of course be proved, but what is involved in the knowledge of such changes may be set forth. Mere motion, then, does not imply change. But neither does matter, which may be defined simply as that which occupies space, without changing its relations to space. To explain the changes of matter—in other words, the change from one rate of motion to another, or from motion to rest—we require to introduce the conception of something causing the change. Now the conception of cause is implied in every real sequence; and the latter can be shown to be knowable only on presupposition that intelligence combines the separate determinations of change in relation to time. In the conception of force, therefore, there is implied the relation of all possible changes of motion to a combining intelligence; and as such changes actually are known, force, as presupposing cause, is bound up with the very nature of intelligence as knowing, and hence the knowledge of a single change is virtually a demonstration that no change can possibly occur in nature which is not a manifestation of force. The persistence of force is therefore simply a special case of the universality of the law of causation; or, what is the same thing, of the uniformity of nature as manifested in special laws. Mr. Spencer's assertion that the persistence of force is unprovable is only true of a theory which assumes nature, and therefore the changes of nature, to be independent of all intellectual relations. Certainly the persistence of force cannot be proved "inductively;" for no number of successive feelings of "muscular effort," apart from the synthetic activity of thought, could ever give us a knowledge even of these feelings as changes, much less of the necessity of all changes in the world of nature. Again, force taken in abstraction from matter and motion is of course unknowable, because it is only in motion that force manifests itself at all, and motion necessarily implies the moveable, *i.e.*, matter. It is perfectly true that, to prove the indestructibility of matter and the continuity of motion, we must introduce the conception of force; but this does not show either that force is identical with matter or motion, or that it is the mere negation of matter and motion. It is not identical, because, as Kant points out, that which occupies space is distinguishable, although not separable, from the relations of that which occupies space, and mere motion is distinguishable from change of motion. It is not the mere negation of matter and motion, because substance is essentially relative to its determinations, and these determinations as changes are relative to the force producing them. We have therefore only to recognise the correlativity of the conceptions of matter and force, in order to understand why the indestructibility of matter is bound up with the persistence of force. The principle of both is that no change in nature can possibly be known as a destruction or creation of that which is actual, since every change presupposes permanence. To say that matter may be destroyed, is to say that that which is only knowable as permanent may yet be known as changing; to say that force is not persistent, is to say that that which is only knowable as change may yet be known as the negation of change. Matter and force are, in short, correlative conceptions, and neither is thinkable apart from the other.

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[1] *First Principles*, § 58, p. 185.

[2] *Ibid.*, § 59, p. 188.

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[1] *First Principles*, p. 186.

[2] *Examination of Hamilton*, p. 213.

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[1] *First Principles*, § 60, p. 189.

Mr. Spencer's proof of the continuity of motion, as corresponding to Kant's third law of Mechanics, it will not be necessary to consider, as it consists in reducing motion to force, and declaring the latter to be an ultimate conception—a point that has already been dealt with.

CHAPTER X.

THE DISTINCTION OF NOUMENA AND PHENOMENA IN KANT AND SPENCER.

IT is popularly supposed that the Critical distinction of phenomena and noumena is in all essential respects identical with the distinction of the relative and absolute, the knowable and unknowable, based upon the doctrine of the relativity of knowledge,—*i. e.*, which is maintained by Mr. Spencer and which was first made known to the English public by Sir William Hamilton. The use of the terms phenomena and noumena by Mr. Spencer, and the superficial resemblance of the two views, are no doubt responsible for the identification of doctrines that, taken in connexion with the system to which each belongs, are not only different, but diametrically opposite. To complete that differentiation of Criticism and Empiricism, which it has been my aim to effect in what has already been said, it will be necessary now to consider Kant's theory of knowledge, in so far as it is a theory of the limitations of knowledge, and an exposure of the illusions into which we inevitably fall in attempting to go beyond the boundaries of the world of experience. This negative side of the Critical philosophy I do not propose to enter into at all minutely. It will be enough to consider how Kant is led to distinguish between phenomena and noumena, and to show wherein his view differs from that of Mr. Spencer.

In the development of his own theory, as we have already seen, Kant draws a strong contrast between the dogmatic and the critical point of view. The great vice of previous philosophy lies in the assumption that determinate objects in their manifold relations exist altogether apart from the forms of perception and of thought. Kant, therefore, holds that things in themselves, as ordinarily understood, are not knowable at all. The objects we actually know are constituted for us in the reflection of the manifold of sense upon the forms of the mind. And the legitimate inference from this would seem to be that, as all knowable objects exist only in relation to our intelligence, the existence of things in themselves apart from such relations is a contradiction in terms. Kant, however, does not draw this inference. Denying in the most absolute way that concrete objects are anything at all except as informed by the pure perceptions of space and time, and by the categories, he is not prepared to say that there are not things in themselves, as distinguished from the things which constitute the actual world for us. In the *Æsthetic* the distinction between phenomena and things in themselves is made to rest upon the subjective character of space and time, which as forms of perception belong to us merely as sensuous beings. If space and time are peculiar to us as men, or at least belong only to beings who like us obtain knowledge by the reflection of sense on thought, we are shut out, as it would seem, from the apprehension of things as they are in themselves. As the objects which we know are always relative to the constitution of our perceptive faculty, the knowledge of things in themselves, supposing such things to exist at all, must always be impossible for us. It must be observed, however, that Kant does not affirm dogmatically that there *are* things in themselves; all that he says is that, *if* there are things in themselves, the conditions of our perceptive intelligence are such that we can never know them as they are. Whether other thinking beings are bound down by the same limitations as we are in their knowledge of individual things, we have no means of knowing.[1] While space and time are the conditions without which *we* can have no knowledge of objects, there may be intelligences to whom such restrictions are unknown. And Kant, in evident adaptation to the ordinary point of view, even suggests that to God real things must be known as freed from the limitations of space and time.[2] Taken literally, this is a manifest affirmation, not only that we cannot assert without qualification that the objects we know are identical with objects as they really exist, but even that there are things in themselves, capable of being known by an Intelligence higher than ours, and untrammelled by the sensuous limitations from which we cannot possibly free ourselves without ceasing to be men. But as Kant has yet to determine whether such a Being as the God of Natural Theology can be shown to exist at all, we cannot take his remark as to the freedom of such a Being from the forms of space and time as more than an *argumentum ad hominem*. If God can be shown to exist, and He is such a being as the dogmatist describes, He cannot have a sensuous nature, and hence He cannot be limited by the sensuous forms of space and time: things as known by Him must therefore be things as they are behind the veil of sense. We cannot of course say what such extra-sensible things may be in their real nature, but we can at least say that they are *not* identical with things as we know them. Kant, however, is perfectly well aware that here he is assuming an idea that strictly speaking he has no right to assume; and he must be held in the *Æsthetic*, to say no more than this, that things in themselves, as distinguished from things as we know them, must, if they exist at all, be altogether different from the phenomenal objects we actually know. Kant, in other words, does not, like Mr. Spencer, affirm dogmatically, that there are things in themselves, but only that, granting the existence of such things in themselves, we cannot possibly know them as they are, but only as they are in relation to our perceptive faculty.

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[1] *Kritik*, § 3, p. 62.

[2] *Ibid.*, § 8, p. 79.

It is only, however, after the complete development of his positive theory of knowledge that Kant is able to enter in a satisfactory way upon the problem as to the limitations of knowledge. Accordingly, at the close of the *Analytic*, the distinction of phenomena and noumena, which had been so far kept in the background, is expressly considered under the title—"On the ground of the distinction of phenomena and noumena."[1] The substance of the discussion is as follows. It has been shown in the *Analytic* that the pure conceptions or categories are simply special functions of synthesis, belonging to the constitution of the understanding, but incapable of being brought into play except in relation to the manifold of sense. It has also been shown that the process by which the manifold of sense is reflected on the categories may be formulated in certain ultimate principles, which combine the particulars of sense under the categories

[1] *Kritik*, pp. 209-224.

by the intermediation of the schemata of the pure imagination, and in relation to the supreme unity of self-consciousness. But what is thus explained is the conditions under which concrete objects, or objects capable of being experienced, are known. Whether the categories and principles of the pure understanding have any application apart from the manifold of sense, schematized by the pure imagination as in time—whether, in other words, they are applicable not only to phenomena, but to things in themselves—is a totally different question.

Now, it is easy to see that even if there are things in themselves, at least the categories cannot be legitimately employed to determine them. For, apart from the manifold of sense, which gives to us the concrete element of our knowledge, there is nothing for the categories to operate upon. No doubt any perceptive or concrete element would be sufficient to give filling to a pure conception; but, as for us there is no perception that is not sensuous, this mere possibility in no way enables us to know any objects except those which are revealed to us in actual experience. We cannot even say that the categories, in conjunction with the pure forms of perception, make the knowledge of real objects possible; for the latter are in themselves merely the potentiality of spatial and temporal relations, as the forms are merely the potentiality of determinate objects. It may easily be shown that not one of the categories or principles can be made intelligible, apart from the sensuous conditions in relation to which known objects are constituted and connected. Isolate a category, and it is a mere form of thought, requiring to be determined to a knowable object by being brought in relation to a special manifold of sense by the intermediation of the schema proper to it. The category of quantity has meaning and significance only when we take a unit a certain number of times, or successively add it to itself. The category of reality implies the determination of time as filled by sensation; the category of negation the determination of time as empty of sensation. Eliminate the idea of permanence or relation to time as a whole, and the category of substance is merely the logical notion of a subject that is never a predicate. So the logical possibility of conceptions determines nothing as to the possibility of real things. In short, if we abstract from the special sensuous conditions under which objects are knowable by us, we have merely the empty conception or thought of a thing, telling us nothing as to the actual nature of the thing in itself. On a mere conception, as has so often been said, only an analytic, and not a synthetic judgment, can be based.

There is, however, a natural illusion which arises here, from the peculiar character of the categories. Space and time are manifestly limited in their application to sensible objects, and hence we at once recognize that they are not applicable beyond the boundaries of the world of objects which we actually know as determinate. It is otherwise with the categories, which belong not to sense but to thought, and therefore naturally seem to have an application to objects constructed purely by thought. This supposed extension of the categories beyond experience is, however, as it need hardly be said, an illusion, for, apart from the concrete filling which they obtain from the imagination as determining the manifold of sense in time, the categories have nothing to operate upon. At the same time, the very fact that we limit their application to sensuous existences or phenomena, inevitably suggests that there are non-sensuous or intelligible existences, which, as the product of intelligence unaided by sense, may properly be called *noumena*. If objects as known are relative to our faculty of perception, it is impossible to avoid imagining the existence of an object *not* relative to that faculty, and equally impossible to avoid the supposition that it is determinable by the categories. Thus, the self as known is always in some determinate state, and therefore is perceived as in time; but with this self as in time we naturally contrast the self as existing in its own nature apart from its determinate relations. It is easy to see, however, that the noumenal object is simply the conception of an object in general—*i.e.*, of an object which cannot be known to exist in any determinate relation; and that it cannot be really constituted as an actual object by the application of the categories to it, since these can only act in relation to an object which is capable of being known as in time.

We must therefore clearly distinguish between a noumenon in the *negative* sense and a noumenon in the *positive* sense. (1) In the negative sense a noumenon is that which is *not an object of perception*. The conception of such an object is implied in the limitation of real knowledge by the forms of perception. As we only know that which is relative to our faculty of perception, whatever is out of relation to that faculty is unknown. The contrast of a noumenon, defined simply as that which is not within the limits of our actual knowledge, and a phenomenon as that which is within those limits, is one that arises from the very nature of our intelligence. That there *may be* such a transcendental object is not a self-contradictory proposition. We are not entitled to affirm that the concrete element required to give determination to a conception can only be supplied by sensibility of some kind: it may be that there are intelligences which originate the particular and the universal element of knowledge by the understanding alone. As, however, our understanding has no concreteness in it, the conception of a noumenon is merely a problematic conception, marking off the limits of our actual knowledge, but in no way enabling us to go beyond objects capable of being experienced. Accordingly, the categories cannot be employed to determine such a noumenon. As our understanding is dependent upon perception for the particular element implied in any possible knowledge of a positive object, the conception of a thing in itself merely serves to mark the limit of our knowledge in perceptible objects, without enabling us to know a noumenon actually existing beyond that limit. (2) The conception of a noumenon, in the positive sense, as an object of a non-sensuous perception, is a mere thing of the mind, arising from the confusion of a bare conception —with an actual object. From the conception of a thing in itself, an unwarrantable transition is made to the affirmation of the reality for knowledge of that which is conceived. But this is the old fallacy of basing real knowledge upon a purely analytical judgment. There is no logical contradiction in the conception of a thing in itself, distinct from the things we know, for the law of contradiction is satisfied when the predicate is not inconsistent with the subject. But the absence of logical contradiction in a judgment does not establish the existence for knowledge of that which is judged about; and hence we have no right to say that there *is* a thing in itself corresponding to our conception. And as a noumenon is for us simply the idea of a limit to our actual knowledge, we cannot determine it by the categories. Only if we had a non-sensuous or intellectual perception, should we be entitled to affirm positively that there is a noumenal object; and as we have no such perception, the categories are not applicable in the determination of noumena at all. So far is it from being true that our understanding is perceptive, that we cannot in the least understand how there can be an understanding not dependent for the concrete element of knowledge on sensible perception. The proper conception of a noumenon is therefore merely that of a noumenon, in the negative sense, as that which is not for us an object of possible perception.

It will help to illustrate what has just been said if we consider shortly Kant's criticism of the dogmatic view, which he contrasts with his own, the view that noumena are positively known. The fallacy here arises from overlooking the limits of our knowledge, and applying the categories to the determination of mere limitative conceptions, or from failing to recognize that the objects we know are not things in themselves, but phenomena. Let us first look at the fallacy which underlies rational psychology, the doctrine of the soul conceived of as actually existing beyond the limits of experience.[1] (1) The soul, it is said, is a *substance*, because there must be a substratum underlying all the particular modes in which we are conscious of it. (2) As the condition of any unity in knowledge, it must also be *simple*, and therefore in itself devoid of all difference. (3) That it is *identical*, or the same with itself in different times, is implied in the fact that our various experiences are all connected together. (4) Lastly, it stands in relation to all *possible* objects in space, because otherwise it could not be thought of as distinct from objects in space.

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[1] *Kritik*, pp. 273-289.

Now (1) the self is here supposed to be known as a thing in itself, capable of being determined by the application to it of the categories of *substance*, *unity*, &c.; in other words, it is supposed to be a noumenon, in the positive sense, as an object of a non-sensuous, or intellectual perception. But this confuses a logical element in knowledge with an actual object existing beyond knowledge. It is perfectly true that the self is the subject of all mental states, but so conceived it is simply the abstraction of relation to consciousness, the "I think" implied in every determinate act of knowledge. First to hypostatize this abstraction, and then to determine it by the category of substance, is a perfectly unwarrantable proceeding. The pure "I" does not admit of determination by the category of substance, because, as abstracted from all its relations, it has no concreteness in it. Nay, even the "I" as known cannot be determined as a substance, because the schema of "permanence" applies only to objects in space. (2) The same paralogism is implied in saying that the self is simple. No doubt we can only be conscious of self as a unity, but this consciousness is necessarily relative to the consciousness of knowable objects as involving multiplicity. To affirm that the self is one in itself is going beyond the limits of knowledge. (3) Nor again can we argue from the identity of the self for consciousness to the identity of the self as existing out of consciousness. (4) And lastly, the fact that the self as known stands in relation to all objects that are capable of being known as external, does not entitle us to say that there is a noumenal self, existing apart from consciousness, and determinable as an *actual* object. The self as known by us is the subject of feelings which exist only in time, as distinguished from objects in space and time; but although the former is distinguishable from the latter, both exist only in consciousness, and therefore only in relation to each other. To determine self as a noumenal *object* is to confuse the logical distinction of self and not-self with their real separation.

The second noumenal object is the world regarded as a whole.[1] The illusion of rational cosmology does not arise, as in the case of rational psychology, from the confusion of an abstract element of knowledge with a thing in itself regarded as an actual existence, but from the assumption that the world as known to us is a thing in itself, independent of all relation to our faculties of knowledge. For when we ask whether the world is a complete unity, we may give one of two contradictory answers, according as our general mode of thought leads us to emphasize the infinite or the finite side of things. Hence we find that reason here gives rise to antinomies or conceptions mutually exclusive of each other. There are, as we see from following the guiding-thread of the categories, four and only four of these antinomies, which we may group into two classes, the mathematical and the dynamical.

(1) The mathematical antinomies are concerned respectively with the infinite extensibility of the world in space and time, and with the infinite divisibility of matter. Supposing known objects to be things in themselves, it can be proved with equal cogency, on the

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[1] *Kritik*, pp. 301-356.

one hand that the world is *limited* in time and space, and that matter is *finitely divisible;* and on the other hand, that the world is *unlimited* in time and space, and that matter is *infinitely divisible.* (2) In the dynamical antinomies it is shown that a *free* causality and a *necessary* causality may be alike proved; and that a *necessary being* belonging to the world, either as its part or its cause, is no more capable of being established than the contradictory proposition, that there is *no necessary being* either in the world or out of it.

Now here we seem to be brought to the conclusion that two contradictory conceptions are equally capable of being proved to be true. But if this were really the case, reason would be in contradiction with itself, and we should be incapable of justifying even the possibility of real knowledge. There must therefore be some radical flaw underlying these antinomies. That flaw certainly does not exist in the mere form of the proof, which is in each case perfectly correct. Wherein, then, does it consist? It consists, Kant answers, in the confusion of knowable objects with things in themselves. We have seen that all concrete objects are relative to the forms of space and time, and therefore that of things in themselves we can have no possible knowledge. But if this is so, it is absurd to say *either* that the world is finite in extent *or* infinite in extent; that matter is finitely divisible *or* infinitely divisible. The world, as a thing in itself, is not in space and time at all, and therefore does not admit of being determined by spatial or temporal relations. The world, as in space and time, again, exists only in relation to our perceptive faculty; and hence it is neither finitely nor infinitely *extended*, but infinitely *extensible.* So matter is neither finitely nor infinitely *divided*, but infinitely *divisible.* There is no limit to the determination of space and time, either as extensive or as intensive quantities, because these are forms belonging to our perceptive faculty, and hence admit of indefinite determination. As to the dynamical antinomies, both alternatives are false when they are supposed to refer to the world of experience; but both may be true when the theses are taken as referring to the noumenal world, and the antitheses as referring to the phenomenal world. There is no contradiction in saying that there is a free cause and a necessary being independent of the phenomenal world, while yet, in the phenomenal world, there is no free cause and no necessary being. This, of course, does not prove the truth of the theses, as interpreted in this way, but it leaves the way open for a proof based on the nature of man as a moral being.

The mere statement of Kant's distinction of noumena and phenomena is almost enough to show that, so far from being identical, his theory is strongly contrasted with that of Mr. Spencer. And the contrast extends to the aim of the theory, the general doctrine of which it forms a part, and the method by which it is established. Kant's object in drawing a distinction between phenomena and noumena is not to degrade the former at the expense of the latter, but, on the contrary, to show that the latter are mere ideas to which no real object can be known to correspond. Mr. Spencer, on the other hand, maintains that noumena are the true realities, and phenomena merely the appearances they present to us. Kant's theory of knowledge, again, goes on the principle that no concrete object can be known to exist independently of intelligence; and hence that the objects we know are necessarily constituted by relations of thought. On the other hand, it belongs to the very essence of Mr. Spencer's system to assume the existence of objects constituted independently of intelligence; and the doctrine of the "unknowable" is therefore in his hands the inevitable result of the dualistic conception of intelligence and nature from which he starts. Lastly, Kant maintains that to noumena the conceptions of substance, unity, &c., and the determinations of space and time, are not applicable, and hence he gets rid of the false abstraction of a self that is beyond consciousness and of a world that exists apart from the real relations by which it is constituted, by insisting upon the relation of all knowable objects to the subject knowing them. Mr. Spencer, on the contrary, can see in the antinomies of reason only a proof of the imbecility of the human mind, and hence he has no solution to give of the apparent contradictions involved in our fundamental conceptions of the universe. The opposition of the critical view of the relativity of knowledge to the dogmatic view of Mr. Spencer is therefore radical. It is true that the two views approximate in the denial of all definite knowledge of supersensible realities; but this is after all only an external resemblance; for Kant never for a moment supposes, as Mr. Spencer does, that a demonstration of the absolute unknowability of things in themselves is tantamount to an assertion that they are the only realities. Had Kant not believed that by the practical reason he could prove the actual existence of the soul, the world, and God, as supersensible realities, he would have denied that we are entitled to affirm that there are such realities; at least one may safely say that he would not have consented to degrade the realities we know in favour of realities that are affirmed not to be knowable at all. It may also be added that a consistent development of the principles established by Kant in the positive part of his system leads to the conclusion that there are supersensible realities, capable of being known by us, whereas a development of the principles upon which Mr. Spencer's doctrine rests must lead to the denial of any knowledge whatever. Leaving the development of the Critical philosophy to another chapter, I shall now endeavour to show more particularly how marked is the contrast between the philosophy of Kant and the philosophy of Mr. Spencer, as to aim, principle, and method.

1. Kant does not say that there *are* noumenal realities, but that the question of such existence cannot be established by theoretical reason, in consistency with the conditions of knowledge. All knowledge implies a relation of subject and object; or, more particularly, objects are constituted only by the reflection of perception on thought. Kant, therefore, denies the knowledge of noumena *because* our knowledge is relative, or rather is a knowledge of relations. Mr. Spencer, on the other hand, maintains that there *are* noumenal realities, or *a* noumenal reality, existing out of all relation to our knowledge; and yet he strangely asserts that this noumenal reality can be known. Like Kant, he holds that known realities are relative to knowledge; but, unlike Kant, he supposes this to be a proof of the existence of the absolute. Kant's reason *against* the existence for knowledge of noumena is Mr. Spencer's reason *for* that existence.

There are two distinct senses among others in which we may speak of the "relative." Mr. Spencer uses the term in both senses, without carefully distinguishing between them, and by this confusion of thought and expression the inconclusiveness of his reasoning is partially concealed. In the first place, by the relative may be understood that which as an object of thought involves a relation or series of relations to thought. The condition of any consciousness whatever being the opposition of subject and object, and the condition of definite thinking being the apprehension, identification and classification of differences in the object, knowledge is always a knowledge of relations. The relative as thus understood does not necessitate the assumption of an absolute or non-relative beyond consciousness: all that is required to constitute the relation is an object having more or fewer differences, and a subject which is more or less determinate; and when these two correlatives are taken together the law that contraries imply each other is satisfied. Secondly, the relative may mean that which is known, as distinguished from the absolute which exists beyond knowledge. The relative in this sense of the term evidently presupposes the independent existence of the absolute; for if there is no absolute beyond the bounds of knowledge, there will be no relative within the bounds of knowledge. The relative is in fact simply the non-absolute, the absolute the non-relative. Take away the absolute, and the relative as relative disappears; take away the relative and there is no longer an absolute.

Examining Mr. Spencer's arguments in the light of the distinction here pointed out, it will be found that all of them receive their apparent force from a confusion between the relative as implied in the very nature of consciousness, and the fictitious relative that results from the assumption of the independent existence of a non-relative beyond consciousness. But so far from the one relative implying the other, it is evident that just in proportion as the one is established the reality of the other becomes precarious. The more stringently it is proved that knowledge is in all cases a knowledge of relations—in other words, that only that which is an object of thought can be known at all—the more apparent it becomes that a relative which has no meaning except in contrast with an unknowable non-relative or absolute, is itself unknowable and incredible. It is apparently from a confused apprehension that he is guilty of this *ignoratio elenchi*, that Mr. Spencer, after laboriously removing the ground from under his own feet by enforcing in a variety of ways the proposition that the non-relative cannot be known, attempts to regain some sort of footing by distinguishing between a knowledge of the absolute and a "consciousness" of it—as if there were a kind of consciousness that excluded knowledge.

"Human intelligence is incapable of absolute knowledge. The relativity of our knowledge is demonstrable analytically. The induction drawn from general and special experiences, may be confirmed by a deduction from the nature of our intelligence. Two ways of reaching such a deduction exist. Proof that our cognitions are not, and never can be, absolute, is obtainable by analyzing either the *product* of thought, or the *process* of thought."[1]

This statement of the general doctrine, clear as it seems, really confounds together the two meanings of the relative, discriminated above. When it is said that the human mind is not capable of "absolute knowledge," but only of relative knowledge, it is implied that that which is known is connected with an absolute lying beyond knowledge, and related to it as reality to appearance. But this evidently is true only if there *exist* such a reality: for if there is no reality outside of consciousness, knowledge will not be of appearances, but of reality. If Mr. Spencer had said, as he ought to have done to be strictly accurate, not that there can be no "absolute knowledge," but that there can be *no knowledge of the Absolute* (a very different thing) it would have been at once apparent that to prove the "relativity of knowledge," in the sense that knowledge always implies relations of an object to a subject, does not carry with it the implication of the existence of an absolute beyond consciousness, but on the contrary is the negation of that existence. If there is no knowledge of the absolute, we have no right to predicate its existence; and if all knowledge involves relations, the absolute, as devoid of all relations—as, in other words, not an object of thought—cannot be known to exist. A confusion between the knowledge of relations and the relativity of knowledge being thus made at the very threshold, it is only to be expected that the same confusion will vitiate the reasonings that follow it. And this is actually the case.

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[1] *First Principles*, § 22, pp. 68-69.

"Reason," we are told, "leads to the conclusion that the sphere of reason is limited. This conclusion expresses the result of mental analysis, which shows us that the product of thought is in all cases a relation, identified as such and such; that therefore being in itself, out of relation, is unthinkable, as not admitting of being brought within the form of thought."[1]

A little reflection will suffice to bring out into clearness the paralogism implicit in this reasoning. On the surface, all that seems to be maintained is that, as the product of thought is always a relation, the absolute being out of relation is not thought at all. Thus far nothing is asserted but the identical proposition: That which is out of relation to thought is not in relation to thought. But the natural inference from this proposition surely is that no such absolute exists, or, if it does, that at least it cannot be known to exist. If every attempt to think "being out of relation" results in failure, why not give up the attempt, and conclude that there is no "being out of relation" to think? Any effort to make that an object of thought which is assumed *not* to be an object of thought must result in failure, since intelligence will not surrender the very law of its existence at our bidding. This conclusion, however, is not the one to which Mr. Spencer comes; on the contrary, he infers that "being in itself, out of relation" exists *because* it cannot be known. To say that "the sphere of reason is limited" is, he maintains, to say, in other words, that beyond that sphere there exists "being in itself, out of relation." As the only reason given for this assumption is that "being in itself, out of relation" is not, and cannot, be known, it follows that "being in itself, out of relation" is proved to exist for the sole reason that it cannot be known. I see no way of escape from the dilemma: if "being in itself" is beyond thought, it cannot be known to exist; if it is within thought, and so known to exist, it is no longer "being in itself."

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[1] *Essays: Scientific, Political, and Speculative*, vol. iii., new ed., p. 258.

The contradiction here evolved is manifestly but a special instance of the general contradiction arising from an interchange of the two antithetical meanings of the relative already distinguished. The product of thought is in all cases a relation, and hence knowledge may correctly enough be said to be knowledge of the relative. But with the relative as thus understood is identified the relative in the sense of that which is the negation of the absolute, and which as such implies a relation to the absolute—the relation of dependence or phenomenal manifestation. For knowledge of the relative is substituted relative knowledge, and thus it is secretly assumed that there is no absolute knowledge because there is no knowledge of the absolute. But as knowledge is in all cases a relation, the true inference is that that which is out of all relation is unknowable, for the very sufficient reason that to define it as that which is out of relation is tacitly to assert its unknowableness. Knowledge is relative or phenomenal, in the sense required for Mr. Spencer's argument only, upon the supposition that the absolute exists beyond knowledge; and to assert that the absolute is beyond knowledge is to take away the only ground upon which knowledge can be shown to be phenomenal, and therefore to establish its absoluteness. If there is no absolute beyond the sphere of consciousness, knowledge is not phenomenal but real; if there is an absolute beyond the sphere of consciousness, knowledge can never be known not to be real; so that in either case the phenomenal character of knowledge can never be proved.

The negation of the absolute, defined as Mr. Spencer defines it, is the only legitimate conclusion to be drawn from the fact that thinking is in all cases relating. An attempt is however made to avoid this conclusion by distinguishing between the "*definite* consciousness of which logic formulates the laws," and an "*indefinite* consciousness which cannot be formulated." Although it cannot be apprehended by definite thinking, the absolute, it is held, is yet given in a consciousness which though undefined is not negative but positive. "Observe, that every one of the arguments by which the relativity of our knowledge is demonstrated, distinctly postulates the positive existence of something beyond the relative. To say that we cannot know the absolute is, by implication, to affirm that there *is* an absolute. In the very denial of our power to learn *what* the absolute is, there lies hidden the assumption *that* it is; and the making of this assumption proves that the absolute has been present to the mind, not as a nothing, but as a something. Clearly, then, the very demonstration that a *definite* consciousness of the absolute is impossible to us, unavoidably presupposes an *indefinite* consciousness of it."

We have here evidently our old enemy under a new disguise. The proof of the "relativity of knowledge," it is said, implies that the absolute exists. But that manifestly depends upon what is meant by the phrase "the relativity of our knowledge." If it means, as alone has been proved, that thinking involves relations, the existence of an absolute beyond the limits of thought, so far from being established, is incapable of being established, unless thought can belie its very nature, and have an object at once in relation to it and out of relation to it. If, on the other hand, by the expression "relativity of our knowledge," we are to understand that knowledge is not of the real but of the phenomenal, the absolute is no doubt "postulated," but it is postulated in defiance of "every one of the arguments by which the relativity of our knowledge is demonstrated." If the "absolute has been present to the mind, not as a nothing, but as a something"—as a

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[1] *First Principles*, § 26, p. 88.

real existence, that is, and not as an abstraction—it follows either that thought has violated its own laws, according to which it can only think under relations, or that the absolute is not devoid of all relations. In the former case, the products of thought are necessarily worthless; in the latter, the absolute must be sought within, and not without consciousness; and thus the Spencerian doctrine of the relativity of knowledge breaks down, either because it is founded upon falsehood or because of its inadequacy. Thus far there seems to be no ground for the assertion of a consciousness of the Absolute, but very strong grounds for its denial. We must, however, consider the nature of that "indefinite" consciousness which is somehow to preserve the existence of an Absolute lying beyond the confines of thought.

"Thinking being relationing, no thought can ever express more than relations. What now must happen if thought, having this law, occupies itself with the final mystery? Always implying terms in relation, thought implies that both terms shall be more or less defined; and as fast as one of them becomes indefinite, the relation also becomes indefinite, and thought becomes indistinct. What must happen if one term of the relation is not only quantitatively but also qualitatively unrepresentable? Clearly in this case the relation does not cease to be thinkable except as a relation of a certain class, but it lapses completely. That is to say, the law of thought that contradictories can be known only in relation to each other, no longer holds when thought attempts to transcend the relative; and yet, when it attempts to transcend the relative, it must make the attempt in conformity with its law—must in some dim mode of consciousness posit a non-relative, and, in some similarly dim mode of consciousness, a relation between it and the relative."[1]

The first part of this argument is: Given two concrete objects of thought with definite relations of quantity and quality to each other: take away the quantity of one, and the quantitative relations of the two disappear; take away the qualities left, and there is no relation whatever between them. The conclusion here reached is undoubtedly correct: between two objects from which all inter-relations have been removed, there is no relation whatever, for if there were, all the inter-relations would not have been removed: correlative terms are no longer correlative, when the relation between them is eliminated. True: but when the relation between them is destroyed, although they are no longer thought of as correlatives, each may still be an *object of thought*. The term which has been purified of all relations to its correlative term, is no longer thought of as a correlative of that term, but it may still be in consciousness as an object—indefinite of course, but still an object. This is clearly implied in the application made of the argument. What Mr. Spencer has to show is that the absolute, while devoid of all relations, is yet known in a "dim mode of consciousness"; and however dim the consciousness may be, there must be an object of it, or there will be no consciousness. "There is," says Mr. Spencer, "something which alike forms the raw material of definite thought and remains after the definiteness which thinking gave to it has been destroyed."[2] That is to say, the elimination of all relations of one object to another still leaves each object as an object of consciousness; the thing that has been deprived of all its definiteness, and so taken out of relation to the thing with which it was at first correlated, does not vanish altogether, but remains as an indefinite "something," we know not what. Now when it is remembered that the Absolute, the existence of which Mr. Spencer is trying to prove, is *Being in itself, out of all relation*, and therefore out of relation to consciousness, the essential weakness of the argument is at once apparent. What has been shown is that a thing from which all the properties are removed is not thought of as in relation to any other thing; but from the very nature of the argument it is implied that this indefinite "something" is an object of consciousness. But as an object of consciousness, it is in relation to the subject conscious of it. Its relations to the object with which it was at first connected have been taken away, but not its relation to the self by which it is known. If then the absolute is in relation to a conscious self, it cannot be identified with "Being in itself out of relation," and therefore is no longer an absolute but a relative. The same conclusion of course follows if, without taking advantage of the admission that the elimination of all definiteness may still leave, as an object of consciousness, an indefinite something that is not anything in particular, we suppose that upon the removal of all relations to another object, there remains no object of consciousness whatever, but a pure blank, the negation of all consciousness. For upon this supposition, the absolute is not brought within consciousness at all, but is to consciousness pure nothing, and therefore cannot be shown to exist. Thus again we come round to the dilemma: if the Absolute is an object of consciousness, it does not exist; if it does exist, it is not an object of consciousness.

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[1] Spencer's *Essays*, vol. iii., p. 293 ff.

[2] *First Principles*, § 26, p. 90.

It may perhaps be thought that the second part of the argument cited above affords a way of escape from this dilemma. The reasoning seems to be that it is not necessary to suppose that the absolute itself is actually an object of consciousness; all that is required is a "dim mode of consciousness," which *represents* or is *symbolical* of the absolute, and which thus gives assurance of the existence of the absolute, while keeping it outside of consciousness. That this is the correct interpretation of the reasoning is confirmed by the remark immediately following the passage quoted: "Just as when we try to pass beyond phenomenal manifestations to the ultimate reality manifested, we have to symbolize it out of such materials as the phenomenal manifestations give us; so we have simultaneously to symbolize the connection between this ultimate reality and its manifestations, as somehow allied to the connections among the phenomenal manifestations themselves."[1] Assuming, then, that the "dim mode of consciousness" has as its object an indefinite "something," which is not the "ultimate reality," but is merely representative of it; it is evident that this supposition creates more difficulties than it resolves. If the "something" in consciousness is representative of the unknown reality, we must suppose that there is some kind of preestablished harmony between the something in consciousness and the something beyond consciousness. But there must be a consciousness of the representative or symbolical character of the one, or there can be no consciousness of the other. This, however, is but another way of saying that there is a relation between that which is and that which is not known, and hence the unknown something is not out of relation to consciousness, but is brought into relation with it, and is no longer an absolute but a relative. Otherwise stated, a mode of consciousness cannot be known to be representative of something else unless a comparison is made between that which is represented and that which is representative; but comparison implies relation; and therefore both terms of the relation must be in consciousness. The absolute, then, to be given in a mode of consciousness representative of it, must itself be in consciousness; in which case it ceases to be absolute. Or again, taking the other side of the dilemma, a mode of consciousness is representative of a reality beyond consciousness, only if such a reality exists. But the existence of it is the very point in dispute, and must not be assumed. It is a manifest see-saw to argue that the unknown reality exists because a certain mode of consciousness is known to be representative of it, when this mode can be known to be representative only if the unknown reality exists.

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[1] *Essays*, vol. iii., p. 295.

2. The principle underlying Kant's conception of noumena is diametrically opposite to that which underlies the philosophy of Mr. Spencer. Kant shows that concrete objects exist only in relation to intelligence, and hence for the ordinary dualism of ideas in the mind and objects without the mind he substitutes the logical distinction of feelings in time and known objects in space. Mr. Spencer, on the other hand, starting from the absolute opposition of object and subject, supposes the former to come into relation with the latter by means of immediate feelings. As, therefore, we only know the objective world by the intermediation of these feelings, the world is gradually stripped of its determinate properties, and survives only as a thing in itself. Enough has already been said in regard to the

Critical conception of the relation of subject and object, but it may not be unprofitable to follow with some care the logical process by which Mr. Spencer reaches the conception of an unknowable reality.

In his *First Principles,* Mr. Spencer tells us that before stirring a step towards its goal, philosophy has to assume the validity of certain primary data of conciousness, and that of these data the most fundamental is the conception of subject and object as "antithetically opposed divisions of the entire assemblage" of things. And in his *Psychology* an attempt is made to establish the proposition, that "when the two modes of being which we distinguish as subject and object have been severally reduced to their lowest terms, any further comprehension . . . . is negatived by the very distinction of subject and object, which is itself the consciousness of a difference transcending all other differences."[1] This dualistic conception of things Mr. Spencer supports by a "negative" and a "positive" justification. By the former is meant a proof that Realism "rests on evidence having a greater validity than the evidence on which any counter-hypothesis rests."[2] Tested by the criteria of priority, simplicity, and distinctness, Realism is found to be superior to Idealism, the latter being based upon the assumption that "we are primarily conscious only of our sensations." People are conscious of external existence long before they frame the hypothesis that the knowledge of external existence is obtained mediately through sensation. "Neither the subject nor the predicate of the proposition—'I have a sensation,' can be separately framed by a child, much less put together." The realistic belief is therefore not only prior in time, but it is the condition of the construction of the idealistic hypothesis. Realism is also superior to Idealism in simplicity. For, in the first place, Idealism always begins by showing that Realism is inferential, and to make good this assertion it has to employ many inferences in place of one; and, in the second place, the supposed proof of Idealism involves in addition a number of new inferences. "Hence, if the one mediate act of Realism is to be invalidated by the multitudinous acts of Idealism, it must be on the supposition . . . that if there is doubtfulness in a single step of a given kind, there is less doubtfulness in many steps of the same kind." And not only is Idealism subsequent in time to Realism, and supported by elaborate inferential reasoning, but it is expressed in "terms of the extremest indistinctness," while Realism is expressed in "terms of the highest possible distinctness."[1]

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[1] Spencer's *Principles of Psychology*, vol. i., § 62.

[2] *Ibid.*, vol. ii., § 402.

These arguments Mr. Spencer enforces with the greatest earnestness, and with every appearance of conviction; nor do I for a moment suppose that he is guilty of any conscious disingenuousness, though the tedious length at which he sets them forth suggests that he has himself some suspicion of their cogency. To me they seem mainly significant of their framer's method of seeking for real knowledge by the elimination of all definite relations to thought. This is what the setting up of priority, simplicity, and distinctness really amounts to. Moreover, as the tests by which Idealism is shown to be inferior in evidence to Realism, would, if valid, establish the superiority of the primary, simple and distinct preconceptions of the unscientific mind over the infinitely more complex and more indistinct conceptions of physical science, we may safely leave Mr. Spencer to fight out his battle with other antagonists and upon another arena. The only other remark that seems called for here is that, even granting the validity of the criteria, the question is not fairly argued: for on the one hand the philosophical theory of Realism is identified with the common-sense belief in an external world, and is thus assumed to possess a priority, simplicity, and distinctness not justly its due; and on the other hand Idealism is confused with Sensationalism, in which alone the knowledge of the external world is sought in "sensations" or "subjective states." For these if for no other reasons, the "multitudinous mediate acts" by which Mr. Spencer tries to show that all mediate acts destroy knowledge, are mere shooting in the air.

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[1] *Psychology*, vol. ii., §§ 404, 412.

Idealism has been weighed successively in the balances of priority, simplicity and distinctness, and has been found wanting. But we must make sure that we have cut off every possible way of escape. "It is not enough to be clear that a doctrine is erroneous: it is not enough even to disentangle the error from its disguises: it is further requisite that we should trace down the error to its simplest form and find its root." What we want evidently is some universal criterion of truth, to which even the Idealist must assent, and by which he may be convicted out of his own mouth. This absolute criterion or "universal postulate" Mr. Spencer believes he has found in the formula, that "the inconceivableness of its negation is that which shows a cognition to possess the highest rank." An "inconceivable" proposition, it must be noted, is not simply a proposition that is "unbelievable," but one "of which the terms cannot by any effort be brought before consciousness in that relation which the proposition asserts between them." Thus the negation of the proposition, "whatever resists has extension," is not only unbelievable but unthinkable, for the subject and the predicate cannot be thought of together.[1]

The "universal postulate" of Mr. Spencer is simply the well-known logical law of identity. An examination of the instance cited by Mr. Spencer in illustration of it places this supposition beyond dispute. The proposition, "whatever resists has extension," when fully expressed becomes, I presume, "the material thing which resists has extension." Now that a "material thing," *i.e.*, an extended thing, "has extension" is certainly a proposition of which the terms cannot by any possibility be separated in thought, for the simple reason that they are identical. We may frame as many propositions of this type as we please, and all of them will conform to the "universal postulate." The proposition, "a hippogriff is an imagined object," is one which bears the test of the postulate without flinching, since it is a proposition the negation of which is not only "unbelievable" but "unthinkable." It is therefore difficult to see how the "Idealist" is to be brought to his senses by so innocent a device as that of asking him to admit that what is in consciousness is in consciousness. The mere analysis of a conception, as Kant has once for all pointed out, only results in an explicit statement of what the conception means; it does not carry us beyond itself to objective truth.

It is quite possible that Mr. Spencer would reply that the proposition, "whatever resists has extension," asserts not only that "an extended thing is extended," but that "resistance" and "extension" cannot be separated in thought and therefore exist together in reality. And no doubt this is so: but it is because "resistance" and "extension" are correlative conceptions that involve manifold relations to thought, whereas the "universal postulate" is expressly brought forward to prove the truth of a proposition *immediately*. The conjunction of these conceptions in our knowledge is the result of a long process of mediation, and the justification of their connection can only be found in the truth of each step in that process. In the language of Kant, the proposition "whatever resists has extension," is a "synthetical" judgment, obtained by a reference to experience. The question therefore comes to this: either the "universal postulate" only calls upon us to state explicitly what is in our consciousness, and thus affords no criterion of objective truth, or it admits that immediate knowledge has no objective validity. As the latter alternative is exactly what Mr. Spencer is trying to disprove, we are compelled to adopt the former.

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[1] *Psychology*, vol. ii., §§ 414, 426, 427.

That the "universal postulate" is merely a law of formal thought is further implied in the setting up of a new criterion to help out the imperfection of the old. It is not to every proposition, Mr. Spencer admits, that the postulate is applicable, but only to those that are "simple" or "undecomposable."[1] Now, in the first place, it is evident that if we go on analyzing or "decomposing" a proposition into its elements, we shall only have completed the process when we have got back to the very beginning of knowledge. The absolutely primary judgment can alone be called "undecomposable" in any strict use of terms: and when we have got this proposition, the virtue of the postulate has evaporated. Into the proposition, "something is in my consciousness," as the simplest, and therefore as the only "undecomposable" judgment that can be framed, any proposition that we choose to name must ultimately be analysed, and to this proposition alone the "universal postulate" can be applied. In other words, the criterion of truth set up by Mr. Spencer is but the logical law of identity, which simply formulates the condition of knowledge, that consciousness postulates itself, but is utterly useless as a test of objective truth. But, in the second place, there is no absolutely simple proposition embodying any real knowledge. Even the simplest judgment that can be conceived, "something is a real object to me," involves the relation of subject and object, and is therefore so far complex, although in relation to all other judgments it may be called simple. The only proposition which is not complex is one in which subject and predicate are identical, and such a proposition is merely verbal. And in point of fact this is the only proposition to which the "universal postulate" properly applies, if as is supposed it is a test of no knowledge except that which excludes all relation to thought. The postulate is therefore not only practically useless, but it falsifies even the initial judgment of knowledge, wnich is not immediate but mediate.

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[1] *Psychology*, vol. ii., § 428.

That the supposed criterion of truth is really destructive of real knowledge, becomes apparent the moment an attempt is made to apply it in support of Realism. The application is made at great length, but in the end it amounts to this: the immediate deliverance of consciousness is that the object is independent of the subject, and this proposition alone conforms to the "universal postulate."[1] But this is simply to say that the postulate only allows of the verbal or identical propositions: "the subject is the subject," and "the object is the object." Bring the object into relation with the subject, and the mutual independence of each at once disappears. On the other hand, as the very existence of knowledge implies the relation of the object to a conscious self, the immediate deliverance of consciousness, *i.e.* of the unreflective consciousness, and the postulate which endorses it, destroy the very possibility of knowledge. The attempt to find reality in the absence of all relation has once again, as it must ever do, resulted in the complete negation of reality; and Mr. Spencer, in his attempt to cover the Idealist with confusion, has only succeeded in demonstrating the instability of his own position. It is really curious to find any one maintaining that subject and object are in absolute independence of each other because they are given in relation to each other: that what is IN relation to consciousness is OUT OF relation to consciousness. Such a self-contradictory position must necessarily lead its advocate into innumerable incoherencies of thought. The main incoherence I shall now try to point out.

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[1] See especially *Psychology*, vol. ii., § 438.

The arguments hitherto employed by Mr. Spencer derive whatever apparent force they have from the tacit identification of Realism with the common-sense belief that objects exist simply as they are known. But as in the endeavour to preserve the assumed immediateness of knowledge a criterion is proclaimed which is applicable only to "simple" propositions, or propositions that exclude all relation, I am not surprised that for the ordinary view which assumes that the object as completely qualified is directly apprehended, there should be substituted the very different view that the object as known is absolutely unqualified; but I am surprised that Mr. Spencer should not have marked his divergence from common sense by deleting all the reasoning which presupposes agreement with it. We are now told that the Realism which can be established is not the "crude Realism" of common sense, but a more refined theory to which the name of "transfigured Realism" is given. The object is known to us through subjective affections or relations, and no relation to consciousness can "resemble, or be in any way akin to," its source beyond consciousness. Nevertheless, there exist "beyond consciousness conditions of objective manifestation which are symbolized by relations as we conceive them." Our knowledge of the object as it really exists is thus limited to a direct apprehension of its bare existence.[1]

Here we see, going on before our eyes, the dialectic by which the common sense assumption of the independence of the object converts itself into a denial of all definite knowledge. When Mr. Spencer speaks of the distinction of subject and object as the "consciousness of a difference transcending all other differences," he does not see that he is really affirming the non-independence of the object; but he does see that as all definite knowledge is constituted by relation to consciousness, the unqualified object is not known at all. Hence he tries to combine Idealism and Realism by maintaining at once that the object is independent of consciousness, and that it is in relation to consciousness; the result being the compromise called "transfigured Realism," which carries over the concreteness of the object into thought, and yet maintains the independence of the purely abstract substratum that alone remains. Two absolutely incongruous theories of knowledge are thus combined, or rather set side by side: the one that knowledge is mediate or made up of relations to consciousness, and the other that it is absolutely immediate or free from relation. Here then we have the doctrine of relativity as applied to the nature of the object. Its validity evidently depends upon the possibility of an independent object being known in a purely immediate consciousness. Now the object, as assumed to be independent, is altogether beyond the sphere of consciousness, and therefore cannot be known to exist. To say that it is independent of consciousness and to say that it is unrelated to consciousness is for knowledge exactly the same thing. And, on the other hand, to speak of a consciousness that is absolutely immediate, is equivalent to a denial that consciousness has any object before it; for an object, as Mr. Spencer admits, is only given in distinction from a subject. In the attempt to preserve its independence, the object has been reduced to the maximum of indefiniteness and the subject to the minimum of relation, and after all, the definiteness implied in the bare relation of an unqualified thing to a pure subject has to be assumed under the disguise of immediate knowledge, or subject and object alike disappear. The unknowable of Mr. Spencer, in other words, is simply the knowable, deprived of its concrete relations and suspended *in vacuo* by the imagination. The dualistic opposition of intelligence and nature has accomplished its destiny in the negation of all real knowledge.[1]

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[1] *Psychology*, vol. ii., §§ 473-4.

3. How strongly Kant's conception of noumena is contrasted with that of Mr. Spencer becomes evident when we look at the view taken in each of the ultimate

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[1] The criticism of Mr. Spencer contained in sections 1 and 2 first appeared in the *Jour. Spec. Phil.* for January, 1877.

nature of the mind and the world. The essence of Kant's criticism of rational psychology is, that a noumenal self, existing beyond knowledge as a substance, is the product of a confusion between the mere abstraction of relation to consciousness and a thing beyond consciousness. Mr. Spencer, on the other hand, adopts, without suspicion of the paralogism implied in it, the dogmatic view that there must be an unknown substance, of which all mental states are passing manifestations. Kant, again, deals with the apparent contradiction involved in the idea of the world as a whole and of matter as divisible, as well as in the ideas of causality and of a necessary being; but he refuses to believe that reason can be in absolute antagonism with itself, and hence after stating the antinomies he goes on to solve them. Mr. Spencer dwells at great length upon "alternative impossibilities of thought"; but believing the logical puzzles he has brought together to be absolutely insoluble, he concludes to the thorough-going imbecility of the human mind. Let us look at the contrast indicated more in detail.

(1) "If by the phrase 'substance of mind,'" says Mr. Spencer, "is to be understood mind as qualitatively differentiated in each portion that is separable by introspection, but seems homogeneous and undecomposable, then we do know something about the substance of mind, and may eventually know more. . . . But if the phrase is taken to mean the underlying something of which these are modifications, then we know nothing about it, and never can know anything about it. . . . Let us yield to the necessity of regarding impressions and ideas as forms or modes of a continually existing something. . . . Existence means nothing more than persistence; and hence in mind that which

persists in spite of all changes, and maintains the unity of the aggregate in defiance of all attempts to divide it, is that of which existence in the full sense of the word must be predicated—that which we must postulate as the substance of mind in contradistinction to the varying form which it assumes. But if so, the impossibility of knowing the substance of mind is manifest. . . . If every state of mind is some modification of this substance of mind, there can be no state of mind in which the unmodified substance of mind is present."[1]

Mind, as is evident from these extracts, is conceived of as a "substratum" or "underlying something," which, as existing apart from its modifications, is unknowable. At the same time we are compelled to "postulate" it; in other words, although unknowable, it nevertheless *exists*. Now, in the first place, it is evident that Mr. Spencer is here guilty of that confusion between a noumenon in the positive sense, and a noumenon in the negative sense, which Kant has so clearly pointed out. Apart from its "multitudinous modifications," mind is not a real object capable of being known to exist, but merely the negation of actual knowledge. The only legitimate inference, therefore, from Mr. Spencer's proof of the unknowability of mind as a *thing in itself*, is that mind as so conceived is a mere fiction of abstraction. The determination of this pure negation by the conception of "substance" is, as Kant would say, an illegitimate application of a category to a mere idea. Mind in itself is neither a "substance" nor the mode of a substance: it is simply nothing at all. That "there can be no state of mind in which the unmodified substance of mind is present," is the best proof that this "unmodified substance" is but an element of reality, abstracted from the relations which give it meaning. In the second place, Mr. Spencer is guilty of the paralogism which Kant shows to be implied in the dogmatic conception of mind as a substance. Although the "substance" of mind is affirmed to be unknowable, it yet "persists in spite of all changes, and maintains the unity of the aggregate in defiance of all attempts to divide it." In other words, mind implies the consciousness of self as a *unity*, and as *identical* with itself in all its changes. Here the transition is made from mind as a "substratum" to mind as the self to which all mental changes are relative. At the same time, mind is still regarded as unknowable in itself, inasmuch as it cannot be presented in consciousness. That is to say, the self as existing for consciousness is confused with the unknown "substance" of mind, and the unity and identity predicable of the former alone is unwarrantably transferred to the latter. In this way the self as a mere negation, by borrowing the positive determinations of the self as it exists for knowledge, seems to be known as permanent and identical with itself. The paralogism is almost too evident to need pointing out.

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[1] *Psychology*, vol. i., §§ 58, 59.

(2) Mr. Spencer allows himself to be entangled not only in the paralogisms of rational psychology, but in the antinomies of rational cosmology. He gathers together with infinite pains all the logical puzzles in regard to the divisibility of matter, the change of velocity, &c., which he can discover or invent, and affirming them to be incapable of solution, he concludes that our "ultimate scientific ideas" are all self-contradictory. Were it so, reason, as Kant remarks, must be in irremediable conflict with itself, the only legitimate conclusion from which would be absolute scepti-

cism. I shall not enter into any detailed consideration of Mr. Spencer's antinomies. All of them, as it seems to me, yield to Kant's mode of solution. Space, for example, is neither finitely divided nor infinitely divided, but is infinitely divisible. The infinite divisibility of space, in fact, arises from its very nature. For any part of space is necessarily continuous, and therefore admits of divisibility to infinity. Only by negating the very idea of space, and reducing it to a mere point, which, as Kant remarks, is not a part of space at all, but simply the limit between two spaces, can we get rid of its divisibility. The question of the finite divisibility or infinite divisibility of matter, as well as the puzzle in regard to its solidity or non-solidity, is also, as it seems to me, virtually solved by the method of Kant. As shown in the Metaphysic of Nature, an account of which has been given above, matter is necessarily divisible to infinity, because any distinguishable part of it, as occupying space, is divisible to infinity. So also the infinite compressibility of matter is implied in the intensive quantity of any given force. The conception therefore of an ultimate atom, *i.e.* a part of matter which is absolutely incompressible, is a contradiction. This, however, is in no way inconsistent with the solidity or impenetrability of any given material substance, since solidity exists in virtue of the relation between two finite forces. While therefore an indivisible and incompressible atom is a contradiction in terms, an undivided and impenetrable atom is not. To assert the one is to contradict the conception of matter as occupying space; to assert the other is to contradict the conception of force as intensive quantity. But there is no real incompatibility between the conception of matter as infinitely divisible and compressible, and the admission that as a matter of fact there is a definite limit to the separation of the parts of any given material body, a limit which is determined by the equilibrium of two contrary finite forces. It need hardly be added that a confusion between the infinite divisibility of motion conceived of as a pure or abstract quantity, and the finite quantity of any given motion, underlies the puzzle in regard to the possibility of increase or decrease of velocity. The contradictions which Mr. Spencer finds in our ultimate ideas are the product of an illegitimate abstraction from the actual relations of the knowable world. When it is recognised that to a finite body the conception of infinity is necessarily inapplicable, the apparent contradictions in our knowledge of the real world disappear.

CHAPTER XI.

IMPERFECT DEVELOPMENT OF KANT'S THEORY OF KNOWLEDGE.

IN what has gone before an attempt has been made to exhibit, with as much freedom as is compatible with accuracy of statement, the nature of the problem which the *Critique of Pure Reason* was intended to solve, and to show how the various parts of the theory of knowledge contained in it are joined together in the unity of a single system. In what remains to be said I shall endeavour to point out generally wherein that theory seems to require further development, in order to make it complete and self-consistent.

1. In defending the method of Kant against the animadversions of Mr. Balfour, I had occasion to contend that philosophy cannot be asked to prove the reliability of special facts or laws, and must fall into mere logomachy if it attempts to do so. The universal conditions presupposed in the knowledge of those facts and laws may be arrived at by reflection upon knowledge as it exists for common consciousness and the special sciences, but no amount of reflection upon the contents of our knowledge can enable us to discover a single new fact or law. Not only is this recognized by

Kant, but as I believe even by Hegel, who is popularly supposed to be the very high-priest of the *a priori* method. Now, if philosophy has nothing to say to the truth of our ordinary knowledge, it is evident that any true theory of knowledge must in some sense start from the world as already constituted for us, or, as Kant would say, "given to us." Unless, however, we carefully observe what is "given," and what has to be discovered, we shall fall into a mistake that must be fatal to the philosophical theory which we are interested in establishing. As philosophy starts from ordinary and scientific knowledge, it is compelled so far to proceed by a method of abstraction, or rather it is compelled to represent the concrete wealth of the universe in an abstract symbol. Such a symbol is the Kantian "manifold," which, as I have attempted to show, is a term of great comprehensiveness, and, therefore, one which fluctuates in its meaning according to our point of view at the time. And if this term is taken, as Kant undoubtedly does take it at times, as standing for the special facts or objects contained in our ordinary and scientific knowledge, the "manifold" will naturally be spoken of as "given," meaning by this that it is not created by philosophy, but taken for granted as a datum. To such a contrast of the "manifold" as "given" in our ordinary knowledge, with the propositions of philosophy which are only discovered by special reflection there can be no possible objection. But a misunderstanding is apt to grow up from confusing the "manifold" as thus understood with the "manifold" as the supposed object of sense. From the fact that philosophy is an account of the conditions of knowledge in general, it is difficult to avoid this identification. Ordinary knowledge is contrasted with philosophical knowledge, as that which seems to be "given" with that which is the product of reflection; and hence the two propositions, that the "manifold" is "given" to philosophy as a datum, and that the "manifold" is "given" immediately in perception, have the look of being merely various statements of the same thing. And when we have identified the two senses of the manifold, it is only a step to the contrast of sense as a faculty receptive of the "manifold," with thought or reflection as a faculty which acts spontaneously or by origination; and it is but another step to the contrast of the "manifold" as the given "matter" of knowledge belonging to the object, with thought as the principle originative of the "form" by which that matter is universalized. It is in this way, as I think, that Kant is led to draw a distinction between the "manifold of sense" as "given," and the "forms" of the mind as spontaneously originated in knowledge.

Now, this contrast of the "manifold" as given and the "forms" as originated—or, what is the same thing when we look at knowledge from the side of the subject, of sense as receptive, and thought as spontaneous—has not only no proper justification, but it is inconsistent with the spirit of the Critical philosophy itself. We may, as I have said, speak of the manifold as "given" to philosophy to be explained, but this is quite a different thing from saying that the manifold is "given" to sense. In the one case, we are looking at two stages in the temporal development of our knowledge, the scientific and the philosophical; in the other, as we are speaking of two logical elements in knowledge, we have nothing to do with the question as to which is first recognized by us and which second. It is perfectly true that objects must be known as objects, before our knowledge of them can be philosophically accounted for; but this does not justify us in speaking of one element in knowledge as given, and the other as originated. That such a contrast is inconsistent with the final result of Kant's own theory may be easily shown. The central idea of the *Critique* is that knowable objects exist only in relation to intelligence. Philosophical reflection, operating upon the data "given" to it by ordinary and scientific knowledge, brings this truth to light, and in so doing, it compels us to go back over the data as given, and to interpret them in the light of our theory. Accordingly the concrete objects which are correctly enough said to be given to us as we reflect upon the conditions of knowledge, break up into two distinguishable elements, the element of the particular or manifold, and the element of the universal or form. But as every act of real knowledge is now seen to imply the reflection of each element on the other, we cannot contrast the one as given with the other as originated. That which is properly said to be given in ordinary knowledge is not a mere *element* of knowledge, but a *concrete object*, comprehending both elements now distinguished by philosophy. While, therefore, concrete objects may be said to be given to the individual thinker, we cannot say that the particular element is given, and the universal element produced by reflection. From the phenomenal point of view both elements are given; from the philosophical both may be said to be produced. If, as Kant maintains, the objects which we know are relative to our consciousness of them, the knowledge of objects and the objects known are but different aspects of the same concrete reality, and there is no longer any valid reason for opposing one element of knowledge to another. The world as known is the world as it exists, and the supposition that there may possibly be a world in itself, distinct from that which is knowable, is a mere product of abstraction.

2. It is but another phase of the same imperfection that Kant opposes the *a posteriori* element of knowledge to the *a priori* element. As the "manifold" has two quite distinct senses, so a double contrast is drawn between the formal or *a priori* element of knowledge, and the material or *a posteriori* element. (1) Examining ordinary or scientific knowledge, without inquiring into its relations to intelligence, we may distinguish between particular facts, and the general laws or principles which govern them. The principles of mathematics enable us to anticipate the spatial and temporal relations of objects; and the principles of pure physics enable us to tell beforehand the conditions to which all possible objects must conform. Special facts or objects we may therefore distinguish from the laws underlying them as the *a posteriori* from the *a priori*. (2) When we ask *how* it is that we can anticipate the universal conditions of objects, while we cannot anticipate objects themselves, we find the answer to be, that the former depend upon the essential constitution of our intelligence, while the latter do not. By the *a priori* is therefore here meant that which belongs to the mind as distinguished from that which belongs to the object.

The distinction of *a priori* from *a posteriori* knowledge, as stated by Kant, is one that can at best be regarded as only provisional. *A priori* knowledge is that knowledge which, as universal and necessary, is presupposed in all specific knowledge, and may therefore be anticipated. It is universal and necessary because it belongs to the constitution of our intelligence, and therefore is implied in the activity of our intelligence, when it comes to operate in specific ways, *i.e.*, to be actually employed in the definite knowing of concrete objects. *A posteriori* knowledge, on the other hand, does not belong to the constitution of our intelligence, but is obtained by the specific apprehension or recognition of the concrete element in knowledge. This *a posteriori* element in knowledge, Kant therefore regards as in a sense contingent. Why so? Because our intelligence is in reference to it passive, and has to wait for the presentation of the concrete element to get something to operate upon.

Now, while this account of the relation of our intelligence to nature has the great merit of recognizing that nature is not completely independent of intelligence, and hence of pointing out that there is both a particular and a universal element in knowledge, and therefore in known objects, the separation of the universal from the particular cannot be regarded as justifiable. The concrete element in knowledge is no more contingent than the universal element. If it is true, *e.g.*, that the category of cause is essential to the explanation of the real connexion of events, it is not the less true that the events connected are real, and therefore necessary. All knowledge, as distinguished from mere opinion, is necessary. Kant does indeed recognize this in his own way, but he regards the necessity as communicated to the *a posteriori* element by the *a priori*. But as the knowable world is, on his own showing, nothing apart from its relations to intelligence, it seems manifest that we cannot attribute the particular element of knowledge to the object any more than to the subject, or the universal element to intelligence any more than to nature. Only if we suppose nature to be in some way constituted independently of thought, can we say that the mind is receptive in respect of the particulars of its knowledge. Kant, however, while insisting in the strongest way on the correlativity of object and subject, particular and universal, yet conceives of the subject with its universal forms as in a sense isolated from the object. Somewhat after the manner of Butler, he supposes the mind to have an independent constitution or structure of its own. Here there clearly is some confusion between the metaphysical and the phenomenal points of view. As we have already seen, it is not incorrect to say that the concrete world is "given" to the individual thinker to be philosophically explained. But the result of Kant's own explanation is to show that *in* that which is given there already is implied the reflection of the particular on the universal—or of the *a posteriori* on the *a priori*, if we still are to use these terms. And as the distinction of the two elements of knowledge is the product of philosophical reflection, although it correctly represents what is implied in every act of real knowledge, it must follow that neither element can be said to be "given" in contrast to the other. Both are given to the individual who *reflects* upon knowledge, but all knowledge, as the comprehension of particulars under the unity of self-consciousness, is a recognition of that which belongs to the essential nature of intelligence. Accordingly, it must be denied that there is even a possibility of the existence of a thing in itself incapable of ever being known by us on account of the limitation of our faculties. We cannot rid ourselves, according to Kant, of the peculiar conditions under which knowledge is possible for us, and hence we can say nothing about things in themselves. How the world would appear to a being of a different mental constitution, we are unable to say. A being, for example, who was not dependent for the particular element of his knowledge upon the special experiences coming to him from time to time, might perceive all things at a glance; but he would have before him a totally different world from ours, and what that world would be, we cannot possibly tell. We can say that he would not perceive things as under the forms of space and time, that his knowledge would not come to him piecemeal, that he would not get a knowledge of things by means of conceptions and inferences; but we can form no apprehension of what the world before him would be, or what would be the nature of his intelligence. Of such a being, of course, we could not say, that part of his knowledge belonged to the constitution of his intelligence, and part was due to his capacity for being passively affected from without; for all things as revealing themselves to him by immediate contemplation or intuition, would be alike necessary and universal. Man, however, is not a being of that kind, and must be contented with a world of objects such as his nature permits him to know. Now, it is undoubtedly important to emphasise the fact, that knowledge comes to us by instalments, and hence that we are limited by this condition of our knowledge. But this is quite a different thing from saying that the particular element of knowledge is "given" to us, while the universal element belongs to our mental constitution. For, while objects present themselves to us in part, each *part* is itself concrete, involving as it does the reflection of the particular on the universal. We do not, *e.g.*, first know the particular properties of an object, and then bring them under the unity of self-consciousness, but the properties are known only in being referred to a universal self. This is but one of the instances in which Kant has not perfectly freed himself from the dogmatic or psychological point of view, against which he so valiantly, and on the whole, successfully contends. For, if the world we actually know exists only in relation to our human intelligence, we cannot be said to have real knowledge, but only knowledge true for us as men. But relative knowledge is not knowledge at all, in any proper sense, though it may be all the knowledge we are capable of having. If the observations peculiar to men as individuals, are unworthy of the name of knowledge, the observations common to all men, which they vainly suppose to be knowledge, must likewise be counted unworthy of it. If all men were madmen, it would matter little to them that there was a method in their madness. If the best of our knowledge is only that which we cannot help having, but which with different faculties we should not have, why should we pin our faith to it?

But while the opposition of *a priori* and *a posteriori* knowledge, when pressed home, undoubtedly leads, as has often been pointed out, to this sceptical conclusion, the substantial merit of what Kant has done towards the construction of a true theory of knowledge cannot be denied without blindness or perversity. He was the first in modern times to insist upon the correlativity of intelligence and nature; and while the letter of his theory makes knowledge after all only a coherent system of semblances, the spirit of it leads to a much more hopeful result. Kant, however, never quite liberated himself from the dogmatic separation of intelligence and nature. Even to the end the world loomed up before him as a thing apart, which by some means got transferred to human intelligence. Insist as he will on the correlation of the outer and the inner world, he still thinks of the self and the object as somehow separate, and as requiring to be brought externally into connection. And the secret of this is, that he never clearly separates the proposition, that in the knowledge of each of us one part of nature after another comes before our consciousness, from the proposition that nature is for us nothing at all apart from its relations to our intelligence. In other words, the limits which hem us in as individual men are supposed to be in some way limits to our intelligence itself. But it may be easily shown that, while the first proposition is undeniable, the second has no proper foundation. Unless there were in us a capacity for apprehending that which truly is, we could not know that what we do apprehend is only relative to our intelligence as men. Granting, as we must do, that the world of nature, as the men of this generation know it, is in some respects different from the world that will present itself before the men of the next, we still cannot, without committing logical suicide, distinguish the world as revealed to human intelligence from the world as revealed to any other intelligence. For this other world, as Kant himself was half aware, would be for us nothing but a creation of the mind, formed by the facile process of abstracting from the fullness and concreteness of the world we know, and very absurdly calling the attenuated remainder a higher world. When Kant speaks of the world as it may appear to a higher intelligence, he forgets that the conception of such an intelligence is for us only what we make it to be, and that if we were really capable of conceiving a kind of intelligence quite unlike our own, we should by that very fact be already beyond the limits of our human intelligence. The kind of intelligence which Kant vaguely supposes to be higher than human, is really below it. Seeing all things as out of space and time, it makes no logical distinctions between things, but only looks into them. But why should space and time be simply means of hiding realities from us? They are so, only if we suppose that realities are not in space and time; in other words, if behind the veil of the phenomenal world there is a noumenal world, knowable only as that which is for us unknowable. The genesis of this fiction is very easily traceable. Abstract from the world we know all its known relations, and call the remainder the thing in itself, and the thing is done. We must then discard the assumption that the nature of our intelligence unfits us for knowing reality, as a mere unresolved remainder left behind in Kant's mind by that dogmatism from which, as we see, he was not thoroughly aroused.

As, then, there is no valid reason for separating the real world from the world as known to us as men, the opposition of *a priori* and *a posteriori* must take another meaning. If the concrete element is as essential to the known world as the abstract—if each is in fact but a logical distinction made by our reflection, although a distinction necessary to explain what the nature of the world is—the one element is necessary not less than the other. Moreover there is no longer any proper reason for opposing the *a priori* to the *a posteriori* as that which belongs to the constitution of intelligence, and in which the mind is active, to that which belongs to the thing in itself and is passively received. In so far as our intelligence reveals reality, that which is revealed is that which is, and the particular element is equally real and necessary with the universal element. It is in fact only because Kant thinks of the mind as a kind of mental structure possessed by all men in common, that he opposes *a priori* and *a posteriori*, universal and particular. I as an individual man, he thinks, am dependent on sense for the concrete element of my knowledge; while the universal element is added by my mind. From this point of view, the forms of sense and thought are still regarded as belonging to me as an individual, although they are the same in me as in other men. Hence each individual is apart from every other, and we have all the same world before us in its essential outlines only because we have all the same mental forms. Thus the dualism which Kant got rid of so far as the opposition of things in space to ideas in the mind is concerned, returns in another form. Each human intelligence, having like mental forms, has indeed a similar world before it, but still for each the world is different, because while the particulars and the forms are similar, the world as known is yet not the world as it is, but only as it appears to be. Hence the real world is again thrust beyond knowledge, and is distinguished from that which we know as noumenon from phenomenon. The only way out of this difficulty is to deny the subjectivity of human intelligence. The noumenal world of Kant must be regarded as the product of a mere abstraction from relation to intelligence. Distinguish between the view of man as a part of the world he knows, and man as an intelligence comprehending the world, and we cannot any longer speak of any element of knowledge as passively communicated. Speaking from the point of view of individuality, the mental forms must be regarded as received, not less than the particulars to which the forms are applied; speaking from the point of view of man as an intelligence, the particular is not less dependent on intelligence than the universal. Intelligence raises man above his mere individuality: the world consists of relations to intelligence, and intelligence itself is simply the world contemplated in its ideal aspect as spiritual.

3. In developing his own theory, as we have seen, Kant is continually coming back to the point that the dualism of knowledge and reality is the root of all evil in philosophy; and hence he is mainly interested in showing that the knowable world could not exist for us were it not that our intelligence supplies the universal element by which objects are constituted and connected. But, bravely as Kant sets his face against the separation of subject and object, the influence of the old dogmatic or dualistic point of view makes itself felt in the exposition of his theory. That this was inevitable may easily be understood from what has just been said in regard to the distinction of the *a priori* and the *a posteriori* elements of knowledge. Accordingly, we find that the different parts of Kant's system are not connected so intimately as they ought to be. The great imperfection in his theory, or rather in his way of presenting it, is his want of the idea of development; by which I do not mean, that he overlooks the evolution of one living being from another, but that he isolates the various elements of knowledge from each

other and is obliged to connect them in an external way. For when the whole task of philosophy is summed up in a demonstration of the dependence of the objective world upon the forms of intelligence, the connection of the various elements which go to form knowable objects cannot be represented otherwise than as external or superficial. Kant accordingly neglects what may, after Comte, be called the dynamical aspect of the world. Starting from knowledge as already given in its completeness, he is contented to point out the various distinguishable elements which it implies. And not only does he not attempt to connect those elements by any inner law, but he denies that any such law can be found. Thus he represents space and time as two separate forms which as a matter of fact belong to the constitution of our intelligence on its perceptive side, but of which we can give no further account. So the various categories are functions of unity, armed with which thought is able to connect the manifold of sense supplied to it; but each category is regarded as complete and separate in itself. And even the "I," as the supreme unity implied in all knowledge, is spoken of as if it were independent of the other elements which it combines together. It must be observed, however, that even in spite of himself, Kant recognizes a sort of logical development of knowledge. In setting forth one after another the principles which formulate the various concrete acts of knowledge by which the world is made intelligible for us, he follows, half-unconsciously, the natural evolution of intelligence, beginning with the mathematical or quantitative principles, and going on to the dynamical or regulative principles. But the want of development in his theory of knowledge cannot help imparting to it an imperfection in form and even in substance that detracts from its conclusiveness. For the ultimate proof of the idealistic view of the world lies in the impossibility of separating any single element of knowledge from the rest without destroying the unity of the whole. When, however, there are numerous *lacunae* in a system, its constituent elements *seem* to be detached and arbitrary. This is the reason, for example, why Kant's proofs of the principles of substance, causality and reciprocity have an air of incompleteness about them. Contenting himself with showing that each involves relations to self-consciousness, he seems to make up knowledge out of detached fragments. Only when substance is seen to involve causality, and both in unity to yield reciprocity, do we feel that we cannot deny one principle without denying the others. And the same remark applies to the interconnection of the categories of quantity, quality and modality, and to the continuous development of each of the more concrete categories from that which is next to it in concreteness. In making these remarks I have no intention of suggesting that the mere contemplation of a category compels us to see in it one more concrete than itself. From any given category nothing can be evolved but itself. The interconnection of which I speak is obtainable by viewing a category in its connection with the concrete objects to which it is applicable. The process by which the categories are isolated from the particular element of knowledge which gives them, in Kant's language, meaning and significance, is a process of abstraction, which needs to be corrected by a process of synthesis. Viewing the categories in their relation to objects, it may be shown that until we bring the world under the highest category of all, the category of self-consciousness, we have not adequately characterized it. In this sense alone, as I should say, is thought "dialectical." The characterization, for example, of existence by the mere category of "being" is so utterly inadequate as to compel us, when we reflect upon its inadequacy, to see that for it must be substituted ever more concrete categories, until at last we have reached the highest category of all in "self-consciousness." Abstract and scholastic as such a logical evolution of categories may seem to be, its importance cannot be overrated. Had Mr. Spencer, for example, seen that his "Unknowable" is simply existence characterized as "being," the emptiest of all the determinations recognized by intelligence to be implied in knowable objects, he would have hesitated to elevate the Unknowable above the Knowable. Nay, had Kant himself seen that his thing-in-itself is only determinable by this simplest of all categories, he might have escaped the danger of setting up the reality of such an empty abstraction as even possible. The systematic connexion, therefore, of the various categories or relations to thought can alone assure us that we are, in any given case, characterizing a special aspect of the universe adequately, and it is the absence of such connexion which gives the appearance of inconclusiveness to Kant's reasoning. It may be added that the rigid front which in the *Critique* the different categories present to each other, inevitably suggests that they are mere things of the mind, or abstractions. For, unless we see that each lower category is but a more or less inadequate form of reflection, by which we try to raise our knowledge to the height of real existence, the continuity of intellectual development must seem to be arrested in exclusive points. When, on the other hand, it is recognized that it is only in the comprehension of all the ideal elements conspiring to constitute the universe as a whole, that we can attain to completeness of philosophical knowledge, it becomes apparent that the categories, although real determinations of existence so far as they go, are separated from each other only in so far as by reflection *we* separate them: in other words, that the advance of knowledge is continually showing the inadequacy of each given way of looking at things. Knowledge is thus viewed as a process by which the human mind recognizes the imperfection of a conception, and feels compelled to seek for one more perfect. The history of human thought, as embodied more or less adequately in the succession of philosophical systems, is thus a valuable aid in the discovery of the order of logical evolution of the categories by which the various wealth of knowledge is systematized and developed. But in truth there is no single aspect of human knowledge from which the determinations of reality may be discovered; nor is there any royal road to that discovery; only by the insight of philosophical genius operating upon actual knowledge in all its aspects can anything like a complete system of philosophy be constructed.

4. I shall not attempt to show how all the categories of Kant's table may be connected with each other: but, in illustration of what has just been said, a few words on the interconnection of the categories of substance, cause and reciprocity, may not be out of place.

In the determination of the real world by the conception of substance, the more simple determination of it as "something real" is presupposed; for when we speak of a substance we are thinking of something as a complex of various properties or relations without which it would lose its reality. The accidental or superficial attributes of a thing may be absent without detriment to its reality, but not the essential attributes which constitute its nature. Thus in the notion of substance there is implied the permanence of certain essential properties, notwithstanding the fugitiveness of accidental properties. But in thinking of an object as a substance, we accentuate the *permanence* rather than the capability of change, although both elements are involved in the conception. This is the point of view from which Kant, in the first analogy of experience, treats of substance, and hence he remarks that substance is one of the categories of relation rather because it is the condition of relation than because it of itself implies relation. Hence he speaks of the relations of an object as if they were superficial accidents of it, belonging rather to our apprehension than to the object. This separation of a thing from its relations, or of the permanent from change, arises from the supposition that the particular element of knowledge is somehow "given" in sense, while the universal element belongs to thought; or, as we may also say, from the assumption that time belongs purely to our perceptive faculty. Ridding ourselves of this false contrast, we can see that the relations of an object are as essential as that to which they are related, and the conception of change as the conception of permanence. In fact, if we abstract from all the relations by which an object is constituted as real, we drop back into the mere conception of "something we know not what," which is the mere potentiality of an object. Substance, therefore, implies the correlation of identity and difference, permanence and change.

In the conception of cause, again, we emphasize the relations or changes of things, rather than the identity or permanence of things. As Kant himself points out, every real change is an instance of causal relation, and all change implies permanence. The relations by which a thing is constituted as substance, or the changes which a substance undergoes, therefore imply the conception of causality. To see this, we must be careful to note that in saying that substance is permanent, it is not meant that every individual object is permanent. An individual or sensible object is simply a certain sum of properties connoted by a name, and no object so conceived is permanent, as we all know. In other words, substance is ultimately a term for nature itself as a unity constituted by intelligence. Hence there is a distinction between the conception of an individual thing—a "substance" as we usually call it—and the conception of substance in the strict sense of the term. This distinction is responsible in large measure for the isolation of substance from causality. Kant, for example, gives as an instance of causality the judgment: "The sun warms the stone," while he regards the judgment: "When the sun shines the stone grows warm," as not including the conception of causality. On the one side we have the sun, on the other side the stone, and each is independent of the other. And, of course, this is true enough in a sense; but it must be observed that the sun and the stone, when isolated in this way, are not only not instances of causality, but they are not even instances of substantiality. Each is assumed as immediately given, and hence the relations implied in each are overlooked. The moment, however, we ask *what* is meant by the terms "sun" and "stone" the relations to other objects implied in each as real come to light. One of these relations is expressed in the judgment: "The sun warms the stone;" for part of the connotation of "sun" is its heat-producing power, and part of the connotation of "stone" is its heat-receiving power. But only *part* of the connotation of each is expressed in that judgment, *i.e.*, only *one* of the relations into which these two objects may enter. And this is what gives rise to the separation of the two conceptions of substance and causality. Every individual object is a sum of relations, and hence the complete nature of any given object is never exhausted in a particular relation. And the matter is made still more complicated by the fact that some objects are capable of entering into an infinity of particular relations, while others are only capable of entering into a small number of relations. The sun, *e.g.*, warms not only this object, the stone, but an infinity of other objects; whereas the stone is only capable of being warmed in a limited number of ways. Besides this particular relation of heat, the term "sun" connotes many other relations of a different kind. At the same time, the sun has no properties except those involved in its relations to other objects; and hence, not only does the property of producing heat imply causality, but all the other properties belonging to it. Only, then, in relation to the stone or some other object is the sun heat-producing at all. If, therefore, we suppose the sun, for the sake of simplicity, to have only the property of producing heat in this particular stone, we must say that it is a substance in virtue of its causality. Apart from this property it is only conceivable as "something, we know not what." Similarly, except as capable of being heated by the sun, the stone is likewise "something, we know not what." Thus we have two "somethings" which in themselves are indistinguishable; the distinction falling between them as a certain relation or change. And there is but one relation or change: the heat of the sun is the same as the heat of the stone. Each instance of causality is thus simply one of the relations or changes of a substance considered apart from the other relations or changes which determine it. Thus causality is reality contemplated as changing in its relations, as substance is reality contemplated as permanent; and as permanence and change are correlatives implying each other, substance and causality are correlative conceptions, logically distinguishable but really inseparable.

Finally, the category of reciprocity is just the synthesis of the correlative conceptions of substance and causality. The sun warms the stone, but the stone must have the capacity of being warmed or the sun could not act. Each object is considered in the first place as independent, and then as brought into relation with the other. As we have seen, however, the objects are not independent in so far they are considered as causally connected: change is relative to substance, and there are not two changes, but only one. Substance is real because of its relations; each of these relations implies a causal connection or change; and each change is the product of a relation between two objects which only exist as causal in that relation. Thus substance implies cause, and reciprocity comprehends both.

5. When we discard the opposition of *a priori* and *a posteriori*, form and matter, intelligence and nature, the separation of pure from mixed categories is at once seen to be untenable. Assuming that there is a fixed number of categories belonging to the constitution of the understanding, Kant is led to speak of the primary

conceptions involved in the system of external nature as derivative, and in a sense empirical. The conceptions of matter, motion, force, and reciprocal action, presuppose the categories of quantity, quality, relation, and modality, but they merely borrow from the latter their *a priori* character, while in themselves they are empirical. When, however, it is seen that there is no ground for such a contrast of *a priori* and empirical, the conceptions presupposed in external nature can no longer be placed on a different level from those presupposed in nature in general. Both classes of conceptions are abstract or *a priori*, when viewed apart from the concrete element of knowledge; both are conditions of real knowledge, and therefore equally constitutive of reality. Nay, it may even be said that the conceptions of matter, motion, and the other categories employed in Physics are more real, because more concrete, than the correspondent categories supposed to be in a peculiar sense constitutive of real knowledge. The former can be said to be "derived" from the latter, only in so far as the more concrete conception logically presupposes the less concrete. In a systematic presentation of the pure conceptions involved in knowledge, speaking generally, we must put the categories of Kant's table, as less perfect definitions of real existence, earlier than those signalized in the Metaphysic of Nature. Thus the conception of substance will precede that of matter, causality that of force, reciprocity that of reciprocal action. In this way we get rid of the illusion, suggested by the language of the *Critique*, and partly shared in by Kant himself, that the pure categories are somehow originated by the understanding itself, while the categories of nature are obtained by going beyond the understanding to the perceptions of sense. *All* categories, as Kant himself virtually admits, are discovered only by reflection upon actual or concrete knowledge, and hence there is no proper reason for distinguishing one class as pure and original from another class supposed to be mixed and derivative. And this simplification allows us to bring philosophy and the special sciences into closer connection with each other; for while no advance of science can possibly bring to light knowledge which is free of relation to intelligence, that is no reason why the development of scientific knowledge should not teach us to systematize our knowledge by more and more perfect conceptions. As a matter of fact, philosophy always has been, and always must be, more or less dependent upon the progress of the physical sciences, as the latter have been dependent upon philosophy. The earlier philosophers endeavoured to systematize knowledge by categories which were necessarily meagre and inadequate, just because the special branches of knowledge were in their infancy. On Kant's view we cannot explain why they should have been entirely destitute, as they show themselves to have been, of such conceptions as cause and force; whereas, in recognizing that philosophy formulates the relations to intelligence manifested in knowledge as it has so far been developed at the time, we at once retain the spirituality of the universe and allow for the process by which new ways of determining it are gradually discovered.

CHAPTER XII.

EXAMINATION OF KANT'S DISTINCTION OF SENSE, IMAGINATION, AND UNDERSTANDING.

THE general remarks in last chapter on the incomplete development of Kant's theory of knowledge will perhaps become more intelligible by a consideration of each of the elements of knowledge distinguished in the *Critique.* These elements may be roughly characterized as those due to sense, to imagination, and to understanding; or, looking at the elements themselves instead of their source, the manifold of sense, the forms of perception, the schemata of imagination, the categories of the understanding, and pure self-consciousness. These I shall take up in their order, endeavouring to point out wherein Kant, in departing from the critical point of view, mars the unity and completeness of his system.

1. The manifold of sense is attributed by Kant to the sensibility, as a purely receptive faculty. This naturally suggests that sense is an independent faculty, giving to us one special *kind* of knowledge, as imagination and understanding give other special kinds of knowledge. The product of sense, however, is held by Kant, notwithstanding the apparently psychological distinction of different faculties, to be merely an *ele-*

ment in knowledge, not a particular kind of knowledge. At the same time one cannot employ imperfect forms of thought without being more or less the victim of them; and hence, Kant is led to admit that a series of subjective sensations constitutes the real element in our inner life. Had he clearly distinguished the different senses in which we may speak of sensation, this inconsistent admission might have been avoided. By sensation may be meant (1) a series of animal affections, (2) the immediate apprehension of a real object, (3) a series of individual feelings in consciousness, (4) the particular element in real knowledge. A few words on each of these meanings may help to make clear the confusion in Kant's theory to which I have referred.

(1.) From the point of view of purely animal life, sensation is simply a number of affections of the individual animal, or changes in the animal organism produced by its reaction on external stimuli. This is the point of view from which Fechner and his followers distinguish the two "aspects" of the organism as nervous excitation and sensation. And of course the main question which has here to be discussed is the physical conditions under which different sensations arise, and especially the relations of the nervous structure to external stimuli, on the one hand, and to the function of sensation on the other; to which may be added an enquiry into the way in which a given type of organism has in course of time been gradually developed, and has become better adapted to be the instrument of such sensations.

(2.) From the phenomenal point of view sensation is the apprehension of a reality regarded as immediately presenting itself to us. It is in fact but another name for ordinary observation, as distinguished from scientific generalization. In this sense of the term sensation is regarded as dealing with external things assumed to be directly revealed to us without inference or mediation of any kind. The distinction of external objects from the individual who apprehends them by his senses is here taken for granted. Objects are therefore supposed to exist as determined in themselves, and sensation to consist in the direct apprehension of them as individual.

(3.) Sensation is regarded by ordinary psychology as the medium by which we come in contact with real things existing independently of our sensations. Each individual thing or event is supposed to be revealed through an immediate feeling in consciousness. Thus sensation is endowed with two opposite and mutually exclusive characteristics. On the one hand it is an immediate apprehension of real individual objects and events, and on the other hand, it is a number of feelings coming and going perpetually in consciousness.

(4.) Sensation in the strict critical meaning is, from the side of the object, the particular element known, and from the side of the subject, the particular element in knowledge. The *particular* must be carefully distinguished from the *individual*. The former is merely an element in knowledge, the latter a concrete act or product of knowledge. The separate properties of a thing, *e.g.*, are particular; the thing as a union of these properties is individual.

Of the various meanings of sensation just distinguished it is evident that only the last can have any proper place in a theory of knowledge, the object of which is to formulate the elements that combine to produce actual knowledge. (1) A series of organic affections may indeed be considered as taken into consideration in a metaphysic, but only in so far as metaphysic deals with the conception of the organic as distinguished from the conception of the inorganic world, or as it deals with the organic beings comprehended in the universe of objects which exist in relation to intelligence. But, in so far as animal sensation is viewed relatively to the possibility of knowledge, an investigation into its nature belongs to empirical psychology, not to metaphysic: being taken as a datum given in observation, no enquiry is made as to its relation to consciousness. Sensation is therefore so far regarded as a series of feelings running parallel with a series of nervous excitations, which again are dependent upon external stimuli. There is simply a given series of changes that are independent of consciousness in the same sense in which the motions of matter, or the vibrations of the nervous system are independent of it. The distinction of subject and object is here quite out of place, since that distinction involves the relation of a knowing subject to a known object. (2) Sensation, as the observation or apprehension of concrete objects, is spoken of by Kant in various passages; but in these, as I understand him, he is referring to the data on which a philosophical explanation of knowledge must be based. In the *Prolegomena*, for example, he speaks of the sun and of a stone as objects of sense, here employing the term sensation in its ordinary, every-day acceptation. (3) When we pass to the third meaning of sensation we enter the region of the *Critique*. Kant indeed refuses to admit that by sensation any knowledge of real individual objects can be obtained; for no mere series of feelings, as he contends, can give us a knowledge of objects, or of their connections. The force of his main argument against psychological Idealism or dogmatism rests upon the consideration that, from a continually changing succession of impressions,—which would be for us the only representative of objects, if objects were things in themselves,—no actual knowledge can be derived. But while he denies that a series of sensations is capable of accounting for our knowledge of objects, he does not deny that a series of sensations exists in consciousness, but only that it can be known except in contrast to permanent objects in space. Now while Kant's criticism of psychological Idealism seems to me valid, the correctness of his view that our inner life may be characterized as a series of feelings in time I am compelled to deny. Had Kant simply said that there are feelings which do not belong to the extra-organic world, but exist only in relation to the organism, no objection could be made to the remark, except on the ground of its irrelevancy to a theory setting forth the conditions of knowledge in general. But he does much more than this. Even when speaking of those feelings which are supposed to stand in direct relation to external objects, he supposes that we may legitimately contrast the inner with the outer life as a succession of feelings in time with permanent objects in space. But, when we have denied that external objects are independent of consciousness, there can no longer be any reason for opposing perceptions to objects perceived. A perception and a percept are, on Kant's own showing, simply the same thing viewed, in the one case from the side of the subject, and in the other case from the side of the object. *Apart from* the relation of the knowing self to the object known, there is neither perception nor percept; *in* the relation of subject and object, perception and percept are two aspects of the same concrete unity. It is only from the dualistic point of view that we can oppose the one to the other: from the critical point of view, there is merely a logical distinction between them. Even if Kant in the *Critique* were explaining the conditions of knowledge in the individual man, it would still be true that a mere series of sensations is nothing for us as intelligent beings. Subject and object being correlative, perception and percept are mere abstractions when taken in isolation from each other. The source of Kant's mistake has been already indicated in the remarks on the two-fold meaning of the "manifold of sense." Distinguishing between observation as the initial stage in knowledge, and sensation as an element in the known world, Kant yet allows himself to apply to sensation, in the latter sense, attributes that are true of it only in the former sense. As observation, sensation is taken to be an apprehension of real external objects. Hence the individual man is regarded as passively apprehending individual things as they lie before him. Even when he has shown that the known world is not independent of consciousness, Kant is still influenced by the idea that sensation is purely receptive. On sensation, as he thinks, we are dependent for the concrete filling or "matter" of the categories, and accordingly, while thought is active or spontaneous, sense is passive or receptive. But if the *Critique*, as I have tried to show, is, in spite of its imperfections, a systematic treatment of the elements in real knowledge, or, what is the same thing, in the real world as known, there is no propriety in speaking of sense as receptive. Receptive it can be only if there is a world lying beyond intelligence, which acts upon a separate mind, and so calls up one feeling after another. But such an unknowable world has no reason for existence, if the world is really relative to intelligence. It is true, of course, that each of us as an individual man, obtains his knowledge in successive parts, and from this point of view we may be said to be receptive; but from no point of view can we be said to be receptive of mere feelings. The knowledge which comes to me in fragments is not the less concrete: it is, in Kant's language, not a mere "manifold" but a manifold reflected on a unity; it is not pure sensation but sensation informed by thought. Sensation as a logical element in knowledge is implied in ordinary observation, but it cannot be identified with it. When we come to explain what the first stage of knowledge means for us as conscious beings, we are compelled to see that, in real knowledge, there is not a passive apprehension of a detached manifold, but a real comprehension of a manifold in unity. If I observe an object as a concrete thing, I at once know it as one and as many. If I perceive a congeries of objects in space, I comprehend them all in the unity of a single consciousness. I cannot apprehend a mere manifold of sense, because real apprehension is not possible except as the combined action of intelligence by which the universal "I" relates to itself a real concrete. Thus ordinary knowledge, and much more scientific knowledge, manifests the action of intelligence in the formation for me of a real universe. While seeking to rid himself entirely of dualism by carrying over nature into intelligence, Kant yet confuses the abstract element of the manifold or particular, with the concrete object revealed in perception. He does not mean to do so, and he shows us how we are to escape from doing so, but in his view of sense as receptive, he shows that he has not entirely freed himself from the trammels of the false philosophy against which he turns all his strength. It is only in consequence of the mistaken attribution of passivity to sense, that Kant contrasts the series of internal feelings with external things, even while he is at great pains to show that known objects are not external to consciousness. The fact that our knowledge of objects comes to us in succession does not imply that we have a knowledge of mere feelings as contrasted with a knowledge of objects. It is only from a confusion between sensation as an element in known objects, and sensation as vaguely identified with ordinary observation, that we seem entitled to oppose the inner series of feelings to outer things in space. When, in our ordinary knowledge, we regard things outside of us as immediately apprehended, it is of course natural to say, that turning our thoughts inward on our apprehensions we find that there is a series of ideas distinct from the objects apprehended. But Kant himself points out that this series of states is only known in relation to external things. His mistake is to allow that, notwithstanding the relation of the sensations to the objects, we must still regard the two as separate and distinct objects of consciousness. In what are they separated? I have an apprehension of a brilliant object, but the apprehension is not separate from the object; it is in fact simply the object viewed from the side of the subject. Hence apprehensions are not a distinct series of feelings in time, as distinguished from the objects apprehended which are at once in space and in time. On the contrary, the apprehension is only a logically distinguishable element in the object, as the object is a logically distinguishable element in the apprehension. Perception is thus, taken as a whole, not an element in knowledge, but the knowledge of a concrete object. Kant recognizes this relativity of internal and external so far; but he is unable to liberate himself from the notion that objects are somehow, in his own language, "given" to us. They may indeed be said to be "given" to us as individuals, since knowledge is real only when it is not a mere arbitrary creation, but a comprehension of a concrete object in its real relations. But they are not *so* "given" that there is, on the one side, a series of feelings in time, and on the other side, a number of objects in space. Kant, therefore, makes the mistake of allowing the mere series of feelings to survive, even after he has shown that all real objects are relative to our knowledge of them. And this he does, because he confuses sensation as a term for the particular element in known objects and in knowledge with sensation as a series of particular feelings coming and going in the individual mind. He denies, indeed, that individual objects are given, but he fails to recognize that, with the transference of objects as determinate to consciousness, there is no longer any propriety in saying that anything is "given." Or, at least, if we are to speak of anything as given, it must be, not from the critical point of view, in which the elements of real knowledge are contemplated, but from the psychological point of view, in which we look at the process by which knowledge grows up for us as individual men, limited by a particular animal nature.

(4) Ridding ourselves, then, of this remnant of dogmatism, by which Kant has allowed himself to be confused, we may accept the view that sensation, in the strict critical sense, supplies the particular element in knowledge. It would perhaps be better in this connection, although, to discard the mis-

leading term sensation altogether. Nothing is more important than to recognize the concrete unity implied in every act of knowledge, and in every known object, and this is all the more important, that it brings out the essential relativity of the elements of real knowledge. For, when we clearly realise that every real object is concrete, distinguishable in one aspect as a multitude of particulars or abstract determinations, the way is prepared for the comprehension of the particular and the universal elements as together combining in the individual. Thus we get rid of the fiction of a universe existing apart from intelligence, while at the same time we take due note of the fact that the individual man no more constructs the world than he constructs himself.

2. I have already hinted that Kant's conception of space and time, as forms of perception, supremely important as it is in its ultimate issues, cannot be accepted without modification. To limit space and time to human intelligence as perceptive, or at least to all possible intelligences which are dependent for the particular element of knowledge on the constitution of their perceptive faculty, is to make a restriction which is at once untenable and inconsistent with the spirit of Kant's own theory of knowledge. Space and time are held to belong to our intelligence, because they are *a priori*, or independent of observation, and they are held to be perceptions because they are not abstract universals but individuals.

Now (1) the fact that space and time are independent of special observations, only shows that they are very abstract elements of the real world. As space is, in the language of Mr. Spencer, the "abstract of all relations of co-existence," and time "the abstract of all relations of succession," both are necessarily presupposed in any knowledge of concrete things. All parts of space being homogeneous, a determination of one part is virtually a determination of every other. But what this shows is not that space and time belong to intelligence, while individual objects do not, but merely that their parts as absolutely simple admit of no variation or difference. When we contemplate knowledge as in process of formation, it is no doubt true that spatial and temporal relations may be anticipated, while more specific relations do not admit of anticipation. But the reason of this is not that the former belong to the constitution of our perceptive faculty, while concrete things belong to nature. No doubt it is in virtue of our intelligence that we can determine the relations of space and time, and so form a science of mathematics, but it is equally in virtue of intelligence that we are capable of knowing the objects which fill them. The contrast of forms of perception and objects perceived rests upon the supposition that while intelligence is in a sense manifested in nature as a whole, its special work is shown only in the *a priori* or universal side of knowledge, as distinguished from the *a posteriori* or particular side of knowledge, which belongs to nature itself. But in this view two conceptions are set side by side which cannot be made to harmonise with each other. Seeing that a knowable world, virtually assumed to be unknowable, is a contradiction in terms, Kant rightly holds that all real objects are relative to our consciousness of them. As however the particular element in knowledge is still said to be "given," intelligence in perception is supposed to be receptive. But it soon appears that this explanation is not quite satisfactory when applied to space and time, since their determinations, as independent of special apprehension, cannot properly be said to be "given." Kant, however, misled by the confusion of the receptivity for knowledge of the individual man with the receptivity of intelligence in relation to a particular manifold of sense, separates between space and time as forms and particular spaces and times, supposing the former to belong to intelligence and the latter to be in some sense given to intelligence. But as even the determinations of space and time are prior to determinate objects, both the forms of perception and the determination of those forms are held to belong to intelligence, but only to intelligence in so far as it is receptive. Such a conception conjoins incompatible attributes. The assumption that space and time are mere forms of perception evidently rests on the preconception that to intelligence in itself there can belong only an abstract universal. But there is no proper reason for such a restriction. Space and time conceived of as unities are mere abstract elements in knowledge, and therefore mere potentialities of determinate spaces and times. The distinction of potential and actual, universal and particular, necessary as it is to the discrimination of the elements of knowledge, must not be taken to carry with it any opposition of intelligence in itself and nature in itself. Hence, space and time, as forms, must be brought into the closest relation with space and time as determinate. A pure universal is no real object of knowledge: neither is a mere determinateness. This Kant clearly sees, but as he is still under the fascination of the idea that only the abstract universal belongs to intelligence, he separates space and time as forms from their determinations. But if the task of philosophy is to point out the elements implied in any real act of knowledge, it seems evident that we must not suppose one element in knowledge to belong exclusively to intelligence, and another element to be externally revealed to intelligence. Each space is a unity in difference, a universal reflected in a particular. A point, as Kant himself remarks, is simply the termination of a line, and hence any number of points is a number of nothings; a line is th etermination of a surface, but no number of lines will make a surface; a surface is the boundary of a solid, but a solid cannot be formed out of surfaces. Each part of space implies a limit that is nothing apart from that which is limited. The particular units of space are units, in fact, only when they are related to the unity in which they coalesce. Space and time are only forms when they are regarded as pure unities; and pure unities are not real objects of knowledge, but merely the universal aspect of a real object, taken by itself.

It is evident, then, that space and time are not to be regarded as mere forms, but as relatively abstract relations of the real world. They are just the simplest point of view from which the real world or real knowledge can be contemplated, when we are determining the elements implied in actual knowledge. But when we have got rid of the arbitrary opposition of that which belongs to intelligence, and that which is externally added to intelligence; and when we see that the question is not as to the conditions of knowledge in the individual man, but as to the conditions of knowledge in general; we also see that Kant's view of space and time as forms of *human* intelligence is inconsistent with his own theory when developed to its true issue. This becomes still more manifest when we consider space and time as perceptions.

(2) Space and time are held to be perceptions, because they are not abstract conceptions, but individual concretes. Attention has already been called to the fact that they are individual only when we regard them as determined to particular spaces and times. As forms, they are not perceptions, but only the potentiality of perceptions. An individual is a unity of the universal and the particular, and hence space and time can only be said to be individual when as unities they are so reflected in particular parts as to form individuals. Kant, however, still holds that as perceptions they are somehow "given." Although he maintains that they are constructions based upon pure or *a priori* perceptions, he yet supposes them to be receptively apprehended when they are viewed in relation to the concrete things to which they apply. As informing the manifold of sense, itself supposed to be "given" to us, they belong to the concrete side of knowledge, if not in themselves, at least in their application to real concretes. The forms of space and time are called out and determined only on occasion of the presentation of a given manifold, and therefore they belong to the receptive side of intelligence. If they were not so called out, they would slumber for ever in the mind as mere potentialities. Now this is manifestly only true if we look at them as forms belonging to each individual's intelligence. The world of objects as informed by space and time has then to be separated from the real world not so informed, and the latter becomes unknowable. The assumption underlying this view of space and time as perceptions somehow given to us virtually prevents us from explaining how we can

know that which truly is. There is no justification for such an assumption: nature, and space and time as simple determinations of nature, are real because they are relative to intelligence. If every object is relative to consciousness, as Kant himself tells us, why should we imagine a world not relative to consciousness at all?

While we cannot be too grateful to Kant for setting us on the right track, when he points out that space and time, and therefore the concrete objects filling them, do not exist apart from our intelligence, we must go on to the end of the path he has entered upon, by carrying over into intelligence the determinations of space and time along with space and time as unities. And this gives a simplicity to our view of mathematical truth, which Kant's theory does not possess. If we suppose that only space and time as abstract unities or forms belong to intelligence, how are we to be sure that their determinations are universally and necessarily true? Kant, of course, would say that, as belonging to our perceptive intelligence, and constructed by us, they must be necessary and universal. But the necessity and universality do not, on his own showing, belong to the determinations, but to the forms, or at least the determinations only borrow their absoluteness from the forms. When, however, we see that the forms are merely one aspect of the individual spaces and times which alone we actually know, we discover that the universality of the propositions of mathematics arises from the fact that all real relations of things, and therefore mathematical relations among the rest, are necessary relations. Doubt is possible in regard to the absoluteness of mathematical propositions only so long as it seems allowable to suppose another universe completely different in its constitution from ours; and when it is seen that such a universe is a mere fiction of abstraction, since it is only definable as the unknowable, the doubt at once vanishes.

The examination of Kant's theory of knowledge so far leads to the conclusion that its essence consists in the proposition that the universal reflected on the particular alone gives real knowledge. The manifold of sense, when conceived from the purely critical point of view, is definable as the particular element in knowledge as contrasted with the universal element. The opposition of space and time as forms of perception to space and time as perceptions, which we have seen to be implicit in the *Æsthetic* of Kant, disappears with the recognition of the thorough-going correlation of subject and object, and leaves as residue the concrete unity of intelligence as shown in the knowledge of individual spaces and times, uniting the universal and the particular. We have now to consider the relation of imagination with its schemata to the elements already considered, as well as to those yet to be considered.

3. That imperfect liberation from the dogmatic or psychological point of view, which is seen in the doctrine that the manifold of sense is "given," and that space and time are merely forms of human intelligence, is also shown in the doctrine of the schematism as to the activity of the pure imagination. Kant certainly draws a distinction between the reproductive and the productive imagination, making it perfectly plain that the latter is no mere repetition of given perceptions; but, at the same time, he is compelled to regard the pure imagination as characteristic only of human intelligence.

Pure imagination, as Kant conceives of it, is limited to the general determination of time, to the exclusion of space. Why so? Because it is one of the conditions of our intelligence that knowledge comes to us in successive acts. Now of course it is plain enough that as individuals, limited by our animal organism to a particular place and a particular time, we know only in part, and must pass from one object of contemplation to another. But while this is true of us as individuals, it is not the less true, on Kant's own showing, that in our intelligence must be sought that which makes possible the knowledge of ourselves, as so limited by space and time. Pure imagination, as described by Kant, is quite distinct from imagination as limited by temporal conditions, inasmuch as it enables us to determine concrete objects by universal relations of time. Kant does not mean to say that we first have the perception of individual things and events as in a particular time, and that we then by pure imagination bring those things under general relations of time; but he means, that only in the determination of them in certain universal ways we are capable of knowing things as in time. Looking at the phenomenal stages of our knowledge, we must rather say that we first have the apprehension or perception of individual things and events, which we then reproduce by imagination, and finally bring under conceptions; and that only when these stages are completed, we discover by reflection that things come under schemata and categories. But, from the critical point of view, the order of the so-called faculties of sense, imagination and thought is a relation not of succession at all, but of logical dependence. It will be as well to distinguish the different meanings of imagination, as we have distinguished the different meanings of sensation.

(1.) By imagination may be meant simply the occurrence of feelings in the animal, when external stimuli are not present. Taking imagination in this sense, we may enquire into the relation between the condition of the nervous system, and especially of the brain, and the imagined feeling which accompanies it. Here we are treating imagination simply as we treat any other object capable of being observed. The enquiry belongs to that sphere of physiological psychology which has recently received so much attention. And no doubt it can be shown that the correspondence between the molecular movement in the nervous system and the imagined feeling is thorough-going, so that no change in the one can take place without a corresponding change in the other. But the enquiry lies beyond the range of metaphysic proper, because the distinction of subject and object, intelligence and nature, is not even brought under consideration. The imagined feeling and the molecular movement are regarded as known, but no enquiry is made into the conditions under which such knowledge is alone possible.

(2.) Imagination, again, may be regarded as the second phase in the temporal development of knowledge. The observation of facts is followed by the imaginative contemplation of them, as lifted above the immediate time and place in which they are observed and so idealized. In this case also there is no room for an enquiry into the dependence of reality upon intelligence: real things are assumed to be given to us, and in exercising our imagination upon them we abstract from the mere details of their existence, and contemplate them under vague and general aspects. The poetic imagination is simply this common faculty raised to its highest perfection; for all intelligent beings have the capacity of representing reality in images that fuse together the separate features of existence in a new unity.

(3.) In ordinary psychology imagination is a term for the capacity of having ideas that are not, like sensations, supposed to stand in direct relation to external objects. The stream of feelings that constitutes the inner life is separated from the realities lying outside of the mind. The images in the mind are supposed to refer to real things, but only mediately, and in so far as they are correct copies of sensations originally experienced. Thus in the stream of inner feelings, perpetually coming and going, there are sensations directly confronting external things, and images referring directly to sensations, and so mediately to external things. And this mere succession of individual images, like the succession of individual sensations, is treated as purely subjective.

(4.) Lastly, imagination, in the strict critical sense, is the faculty of determining the particular element of knowledge to certain general relations of time, such as permanence, order, and co-existence. It is at once universal and particular—universal in itself and particular in its application. Imagination, as thus understood, is no mere reproduction of individual perceptions, but the process by which universal conceptions or categories are brought into relation with the manifold of sense, which is thus determined to universal relations of time.

Of these various meanings of imagination only the last is properly in place in metaphysic. Kant, however, does not keep the reproductive imagination absolutely distinct from the productive imagination, and hence he will be found attributing to the latter attributes only true of the former.

Imagination as a mere affection of the animal, which may go on without any recognition of self by the animal, is of course excluded. Kant, indeed, has a summary way of disposing of the "mere animal," which reminds us that he lived before the doctrine of evolution had taken such hold upon the scientific imagination as it has recently done. This is no doubt an imperfection, for the enquiry into the natural history of the whole animal creation has great importance within its own sphere. But Kant was not wrong in eliminating from his critical enquiry all considerations as to the natural evolution of the animal, since, as he shows, the animal, like the other parts of nature, is one of the objects of knowledge, and therefore only falls to be considered in so far as the general relation of subject and object comes under investigation.

Kant, again, shows his appreciation of the distinction between imagination as a phase in the temporal evolution of knowledge, and imagination in the critical sense, although he has not marked off the one from the other so clearly as we could wish. Imagination, he remarks in one place, is "a faculty of representing an object when it is not present in perception."[1] Now, as Kant has pointed out that known objects are not independent existences, he cannot of course regard imagination in the critical sense as a reproduction of objects immediately known as they exist apart from our intelligence. His analysis of knowledge has led him to regard sense as giving us the "manifold"; but it is a manifold of particulars, not of concrete things. A reproduction of the "manifold" is an absurdity; for the manifold is not of itself an object of knowledge at all, but simply an element in knowledge. Kant, therefore, does not regard imagination as reproductive, but as productive. It acts on the form of time, and by so doing determines it in general ways. Thus it does not come *after* the presentation of individual things to sense, copying their general features, but is *logically* prior to our knowledge of the things of sense. But, just as he accepts the ordinary view that the "matter" of sense is given, even when so altering the account of the relation of intelligence and nature as to make the supposition meaningless, so he figures imagination to himself not as simply the logical determination of intelligence in relation to nature, but as a process taking place in time. Now it seems plain enough that imagination cannot properly be at once that which determines time, and that which is itself limited by the very determinations which it is itself conceived of as originating. If the actual knowledge of real things can only be explained by supposing a process by which the manifold of sense is determined in time in certain general ways, it is absurd to say that imagination is itself under limits of time, and irrelevant to say that all our knowledge comes to us in succession. We cannot know ourselves as individuals to be under limitations of time in knowing, except in so far as the imagination determines us to those limits. To point out that our mental life is conditioned by the form of time as determinate, is true enough, but it is a remark from the point of view of the individual, not a remark in place in a theory of the conditions of intelligence as such. Here again Kant is misled by the influence of that psychological Idealism from which he struggles so hard to be free. Having first conceived of time as a mere form of our sensibility, and the "manifold" as somehow "given" to us, or passively received, he is compelled to bring the manifold and the form into connection by a device that savours too much of an afterthought. The form lies ready in the mind, or rather the mind exists apart from nature with its form of time, and the manifold of sense is then given from without. The internal form and the external manifold must, however, be brought into relation in some way. But a mere universal form, and a mere manifold of sense, cannot come together except through a process of synthesis in time. The form of time must be determined, and the manifold of sense is no determination of it, but only of the external reality. It is to explain this determination that the imagination is introduced. Having the form of time as potential, and receiving the manifold of sense, we go through the parts of the manifold one after the other, and so determine them. Without this successive synthesis, therefore, the form cannot be brought into relation with the manifold.

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[1] *Kritik*, p. 127.

There is here manifestly an intermixture of the critical and the psychological points of view. And it is not difficult to see that two heterogeneous elements are mechanically conjoined without being really fused into one. Looking at imagination as a phase in the phenomenal evolution of knowledge, it is of course correct to say that it implies a synthesis of individual images, just as perception implies a synthesis of individual objects. But when we attempt philosophically to explain what is implied in this phase of our knowledge, we must recognize that it involves the concrete unity of the universal and the particular, whether we look at the object imagined or at the imagination of the object. There are of course imaginations that are merely arbitrary combinations of incongruous elements of perception; but an examination of the distinction of real from fictitious imagination belongs to psychology, not to metaphysic. Imagination, as an actual phase of knowledge, therefore implies the essential correlativity of intelligence and its object. On the other hand, imagination, in the critical sense, does not deal with concrete objects, but merely with an element in concrete objects. Finding that every individual object exists only in relation to intelligence, we are compelled to recognize that there is in every real act of knowledge a particular element and a universal element. The particular element, as we have seen, Kant attributes to sense, the universal element to thought. The mere name is of no consequence, but it is of great importance to recognize that the particular element is not less necessary to knowledge and to known objects than the universal element. But if this is so, we must not only take note of the particular and of the universal, but of the relation between them. Now, all this is implied in imagination as a phase of knowledge, as it is implied in every act of intelligence whatever. Hence Kant is not entitled to say that the pure imagination is conditioned by time. Separating in thought the particular element from the universal element, we must yet take note of their relation. Imagination is simply in effect this *relation* of the two elements of knowledge. Kant, however, conceives of it as a faculty or process distinct from thought. But if all real knowledge implies a union of particular and universal to form the individual, there is no propriety in bringing in a special faculty to explain what is already explained. Whether, therefore, we are determining relations of space or time; whether we are connecting concrete properties in the unity of individual things; or whether we are considering material bodies as moving, as manifesting force, and as acting and re-acting; in all these cases we must recognize the necessary relativity of the particular and the universal in the individual.

Lastly, Kant, so far mixing up the phenomenal with the metaphysical point of view, is naturally under the influence of the psychological conception of imagination as a separate faculty of knowledge. Imagination, as Kant with great shrewdness points out, is at once a universalizing and an individualizing faculty. It universalizes by drawing a sort of monogram of an individual thing, which as an outline or sketch applies to all objects of the same species; it individualizes because it enables us to realize our conceptions sufficiently to see that they are applicable to real things. Thus it is a sort of mediator between conception and perception. Imagination, then, is not merely the faculty by which images of individual things are presented to us, but the faculty by which images are stripped of their peculiar features, and reduced to schemata. These schemata of individual things are however different from the transcendental schemata. The points of agreement are mainly these. In the first place, the empirical schema reduces individual perceptions to general outlines or pictures; the transcendental schema determines the manifold of sense to universal modes of time. In the second place, the empirical schema as a general outline of an individual thing, gives definiteness to an abstract conception; the transcendental schema determines the category or form of thought to universal modes of time, which combine with the manifold of sense to constitute known objects. The differences between them are however not less marked. In the first place, the empirical schema is an outline of an individual thing regarded as given in apprehension; the transcendental schema is a universal determination of the *form* of time, and therefore known individual things presuppose it. In the second place, the empirical schema is a realizing in a general outline of an abstract conception lying ready made in the mind; the transcendental schema is a determining of a primary conception or category which belongs to the constitution of thought, but is in itself merely an element in knowledge or in known objects. Lastly, the empirical schema comes after perception of individual things; the transcendental schema logically precedes the perception of individual things. To sum up these differences in a word, the empirical schema has reference to individual concretes, which it presupposes; the transcendental schema has reference to individual concretes presupposing it. Thus while the empirical schema really supposes knowledge of individuals to be already possessed, the transcendental schema explains how such knowledge is possible.

Now as the transcendental schema ought to be simply one of the elements in knowledge or known objects, we must discard the resemblances of the two kinds of schema as superficial. Kant, however, attempts to assimilate them. And the point of absolute agreement to his mind is, that in both we give determination of a general kind to conceptions, and to both the sensible element is "given." But the determinateness in each is of quite a different kind, and the sensible element is also different. In the one case, it is a determinate element, in the other, a determinate representation; in the one, the sensible is the particular element in knowledge, in the other, it is sensible or concrete individuals. Now an element in knowledge has no reality apart from the other elements which go to constitute knowledge, whereas a determinate representation is already the representation of reality. Moreover, the particular element in knowledge is nothing apart from the other elements of knowledge, while a concrete individual already implies the combination of the different elements of knowledge. In determining the elements of knowledge we must therefore start from ordinary knowledge as completed, and hence we have nothing to do with the conditions under which knowledge is possible for the individual man. Accordingly, imagination can only be taken as a term for the process of relating the elements of knowledge to each other. Whether that knowledge comes to the individual in instalments or all at once, does not alter the character of the knowledge itself; and hence we must discard considerations connected with the way in which knowledge is obtained by us as individuals, and confine our attention to the nature of the knowledge so obtained. In short, imagination, in the true critical sense, is simply a term for the *relation* between subject and object, the universal and the particular. The determination of time is therefore but one instance of the activity by which intelligence surrounds itself with a world of its own construction. The same elements are implied in the determination of space, in the determination of matter, of motion, of force, nay, in the simplest determination of an external object as a congeries of properties. Everywhere, and in all known objects, the same process of referring the particular to the universal is implied. Kant is prevented from taking this view, because he cannot get rid of the idea that time is a mere form of the human intelligence, and that the manifold of sense (the particular) is somehow "given" or comes to intelligence from without. But time, like space, is, as I have tried to show, one of the simplest determinations of the real world; and hence the supposition that space and time have any more claim to be referred to intelligence than other objects of perception is untenable.

4. We have seen that, when interpreted from the point of view which the *Critique* first made possible, the manifold of sense is properly a term for the particular element in knowledge, that the distinction of space and time as forms from individual spaces and times implies the reflection of the universal on the particular, and that imagination is virtually the process by which the particular in its various modes is related to the universal. We have now to consider Kant's account of the understanding as a faculty of combining conceptions into judgments. It will be advisable to look first at conceptions. The following are the senses in which the term "conception" may be employed.

(1) In the development of knowledge in time the conceptual view of the world succeeds the imaginative, as the latter is preceded by the perceptive or observational. Conception in this sense is distinguished from imagination, as abstract from figurate representation. At the stage of conception individual facts are run up under universal laws. The changes in the material universe, for example, are brought under the conception of gravitation, by means of which they are all combined in the unity of a single law. This law may be called abstract, not because it is a mere general or abstract conception, obtained by elimination of all the differences of material bodies,

but because it formulates only certain select aspects of nature, to the exclusion of other aspects equally real. The law of gravitation tells us nothing in regard to the chemical, physiological or psychological relations of existences, but picking out the motions of bodies relatively to each other, it combines them all under a single conception. Hence there is a multiplicity of conceptions or laws, corresponding to the varied aspects of the real universe. (2) By conception, again, empirical psychology means a general idea, the product of a process of abstraction by which the points of difference in a given number of individual objects are gradually eliminated, and their points of agreement gathered together into a unity. It is in this sense that formal logic speaks of conception. By immediate perception, as it is supposed, concrete objects existing independently of consciousness are given to thought, and are then worked up into conceptions, which include under them all the individual things having common attributes. (3) Pure conceptions or categories are universal forms belonging to the constitution of the understanding, by means of which the manifold of sense is individualized and reduced to the unity of known objects and connexions of objects. These pure conceptions agree with abstract conceptions in the following points. In the first place, an abstract conception combines individual objects or conceptions less abstract than itself; a pure conception combines a manifold of sense. In the second place, an abstract conception reduces individuals or species to the unity of a general idea; a pure conception reduces a manifold of sense to the unity of a concrete object. The points of difference, again, are these. In the first place, an abstract conception comprehends the attributes common to a number of individuals or species; a pure conception constitutes an individual object as such. In the second place, an abstract conception is formed from individual objects given to thought; a pure conception belongs to the very constitution of thought. Thirdly, an abstract conception follows the perception of individual things; a pure conception logically precedes and conditions the perception of individual things.

It does not require much reflection to see that only the last of these meanings is consistent with the critical explanation of knowledge. (1) Conception, in the first of the senses just distinguished, is spoken of in many parts of Kant's writings, and especially in the more popular statements of his theory; in the *Prolegomena*, for example, where a distinction is drawn between judgments of perception and judgments of experience. But as the special facts and laws of ordinary knowledge, as I have so often insisted, are not by Kant sought to be proved, but are assumed as data requiring only to be brought into relation with intelligence, an investigation into the special conditions under which such conceptions or laws are formed belongs to the organon of the special sciences, not to the critical investigation of the primary conditions of knowledge. A few remarks however, on the nature of scientific conceptions may not be out of place.

The advance from simple apprehension to scientific conception, or from facts to laws, is in one sense an advance to the more concrete, and in another sense an advance to the more abstract. Every science has its first beginnings in what may be called, from the phenomenal point of view, the immediate perception of facts. And this holds true of the mathematical, not less than of the physical sciences. Numbers seemed at first sensible existences; geometry arose from the rough measurement of the length and breadth of sensible things. Hence, the first step towards the constitution of a science consists in abstraction from the immediate or superficial properties of objects, and concentration on a single aspect of reality. A certain relation has to be endowed with a sort of fictitious independence, and contemplated *as if* it existed independently and purely for itself. A clear conception of the spatial and temporal relations of things is essential to the progress of the physical sciences, and upon the relations thus artificially isolated rests the science of mathematics. Physics, again, must be blind to all aspects of the real world except those connoted by the term "matter," if the changes which take place in external things are to be formulated clearly in a system. Each science, therefore, ignores the sensible properties of things given in ordinary apprehension, as well as the relations fixed upon by the other sciences. It is of course impossible absolutely to separate the sphere of one science from the spheres of the others, for, as all deal with the relations of objects as such, they may be said together to form a single complex science of nature; but at least the aim of each science—and this becomes more and more true as time goes on—is to deal exclusively with a single aspect of existence. Specialization of function here, as in economical and social life, is the prevailing tendency. Nor is this analytical tendency merely accidental and superficial; it is the necessary condition of progress. The vague and confused perceptions of common observation cannot be developed into the definite and exact laws of science, until each aspect of the world has received that peculiar illumination which arises from isolation amidst surrounding darkness. To know an object in the complexity of its relations, it is first necessary to concentrate attention upon each of those relations, and this may be called a process of abstraction. The first immediate unity of things has to be broken up by reflective analysis, before a concrete object can properly be said to exist for knowledge. The various sciences are therefore in a sense based upon abstraction or analysis. On the other hand, abstraction is at the same time concretion, for it is impossible to separate one aspect of reality from others without by that very fact advancing to a more definite knowledge of reality in general. And if we arrange the sciences in the order of their complexity, we may say that all the sciences taken together imply a gradual advance from the relative abstractness of common knowledge to the relative concreteness of scientific knowledge. Each science, dealing with a given set of relations, leaves a residuum to be resolved by the science next to it in complexity. When we have set forth as fully as possible the quantitative relations of things and systematized our knowledge of them in the science of mathematics, we have next to deal with the motions of things and with their changes, as considered by dynamics and physics. A new effort to comprehend things in their completeness gives rise to chemistry, as dealing with the composition and decomposition of material elements. Next we pass to biology and lastly to psychology. The whole of the special sciences taken together may therefore be said to constitute a systematic knowledge of the various aspects of the universe.

In formulating the process by which scientific conceptions are obtained, it is of the utmost importance to overlook neither the analytic nor the synthetic side of knowledge. There is a sense in which it may be said that all knowledge is based upon abstraction or analysis. The comprehension of one property in pure isolation is a feat that can be performed by no conceivable intelligence, since every property exists only in relation to another property; but in the advance of knowledge, by successive differentiation, it naturally comes about that a greater degree of interest attaches to one term of a relation than to another. Hence one property, or one set of properties, is looked upon as positive, in contrast to the other or others, which are regarded as negative. The distinction is itself a purely arbitrary one, for the term from one point of view called positive may from another point of view be termed negative. But this predominant interest in one term of a relation, while it does not convert the isolated term into an independent reality, yet prepares the way for the illusion that it does so. And hence, at a later stage of thought, the positive properties—the properties in which an excess of interest is felt—are classed together as the *essence*, or definition of a thing, while the negative properties are vaguely passed over as unessential. But essential and unessential, like positive and negative, are purely relative distinctions; what from a special interest is conceived as essential, is again rejected as unessential. It must, therefore, never be forgotten that when we speak of the essence of a thing, we do not thereby limit reality for all time to the special group of properties we have in view for the time being. When matter is said to be defined by the property of solidity, as its essence, it is a tremendous perversion of the truth to suppose that by such a limitation we have, as by a magical incantation, caused all the other relations of the universe to disappear. Those properties classed as essential, fixed in a definition, and marked by a common name, are real; but they are not all that is real. The conception of matter as a congeries of indivisible units of mass is not intrinsically truer or more valuable than the conception of matter as defined in the totality of chemical relations. Intrinsically, the one is as important as the other; relatively, the one or the other is more important, according to the special point of view; absolutely, *i.e.*, as a formulation of existence in its completeness, the more complex conception is the more important of the two. The term matter, like all other common names, is simply a short-hand method of designating one aspect of real existence; it is no mystic spell to conjure all other relations into nonentity. To say that knowledge is gained by an analytical process is only a way of drawing attention to the fact that the mind's interest in a special set of properties overrides its interest in another set, so that the negative term of a relation is passed over as unessential, and only the positive term is regarded. In reality, as has been shown, analysis is not a single process, but only one aspect of a single process; just because one property is only an element in reality, and, therefore, in itself an abstraction, every act of knowledge is synthetic not less than analytic.

We may, therefore, say that knowledge proceeds from the less to the more concrete, from the more to the less abstract, from the less to the more known. Hence common knowledge is more abstract, or less concrete, than scientific knowledge. Here, again, it is important to notice that, from the mind's predominant interest in some terms over others, certain properties are classed as essential, others as unessential. Thus, existence gets separated into groups of positive attributes, while the other attributes are vaguely merged in the general conception of negation. From this point of view common knowledge may be said to be analytic, not because analysis is possible apart from synthesis, but because the mind's interest in the positive attributes gives them a fictitious excess of reality for the time. Thus the way is made easy for that formulation of common sense which, overlooking the negative movement involved in the process of knowledge, conceives of existence as made up of a number of individual things or substances having purely positive attributes. Hence a double illusion: the illusion that a substance has reality, apart from its relations to other substances, and that it has reality out of relation to intelligence. Just as the negative factor implied in every form of reality is passed over as if it were not, because of the almost exclusive interest taken for the time being in the affirmative factor, so the still less manifest relation of the properties to intelligence is overlooked or misinterpreted. Accordingly, we find the empiricist, who formulates the common-sense conception of reality, speaking in language which implies the threefold fiction of "something" apart from its properties, of positive attributes in isolation from negative, and of a concrete reality independent of intelligence. Recognizing the analytic or affirmative side of knowledge, and passing over the synthetic or negative side, he is led to separate real existence from that which is the necessary condition of its reality. The same imperfect comprehension of the elements of knowledge and of reality which leads him to raise the positive or relatively essential properties to the "bad eminence" of independent sovereignty also suggests to him to separate matter, as defined by one set of properties, from intelligence, as defined by another set, and to claim for each a reality of its own. He passes from the one to the other in turn, and fails to see that, as the negative aspect of reality has also a positive side, a real world apart from a universalizing intelligence to make it real, is as much a fiction as a circumference without a centre.

The development of common into scientific knowledge involves a great increase in that double process of differentiation and integration which is implied in the simplest conception of reality. The universe increases immensely in complexity, but at the same time it coalesces into a more perfect unity. Here, also, countenance is given to the false conception of real knowledge as a process of analysis or abstraction. The empiricist is not content merely to separate thought and matter as abstract opposites of each other. He applies the same process of abstraction to the various aspects in which nature itself is contemplated by the scientific mind in its different moods. Common knowledge really grows up by means of a dialectical process, in which there is a perpetual equilibrium of the positive and the negative aspects of reality. But as the individual mind interests itself temporarily only in the attributes it conceives as positive or essential, the negative or unessential attributes are passed over with a hasty glance and forgotten. Thus the equilibrium is destroyed. The same dialectical process, and the same predominance of interest in certain select relations of existence, is manifested in the procedure of the special sciences, but with this difference—that each tendency is carried out to its extreme. The scientific man breaks up the first immediate unity of things, which is sufficient to satisfy the languid interest of common sense, and in this analysis he vastly extends the synthesis essential to all experience, increasing a thousandfold the complexity of the known universe. But as his interest centres, not in the easily accessible relations alone regarded by common sense, but in those hidden away from its superficial gaze, he naturally treats the sensible properties of things as unimportant and unessential.

"It is important," says Mr. Lewes, "to bear in mind that all our scientific conceptions are analytical, and, at the best, only approximative. They are analytical, because science is 'seeing with other eyes,' and looks away from the synthetic fact of experience to see what is not visible there. They are approximations, because they are generalities."[1] The contrast here drawn between common knowledge as synthetic and scientific knowledge as analytic is utterly fallacious. There are not two discrepant processes of knowledge, but all knowledge is developed in the same way, by a differentiation that is at the same time integration—an analysis that includes synthesis. The unity of the process of knowledge is just as perfect as the unity of existence and the unity of intelligent experience. Common knowledge is more remote from reality than science, and hence it is more "general," or abstract. When science, to use one of Mr. Lewes's illustrations, resolves light into undulations of ether acting upon the retina, it does not pass from fact to abstraction, from synthesis to analysis. The point of view is changed; but in the change there is an actual increase in differentiation and integration, an advance from the more to the less general, the less to the more concrete. By breaking up the phenomenon of light into its factors, the undulations of an elastic medium and the sensibility of the retina, the phenomenon is more exactly defined; the analysis is, at the same time, a new synthesis. And this is but a single instance of the general procedure of science. It is true that, if we attend solely to its analytic aspect, as Mr. Lewes does, and attempt to build an exhaustive theory of the process of knowledge upon that alone, we may contrast the fulness of reality, characteristic of common knowledge, with the extreme tenuity of scientific knowledge; but to do so is simply to misinterpret the one kind of knowledge as well as the other. Both alike proceed, and must proceed, by a dialectic process that is neither analytic nor synthetic, but both in one; and both alike distinguish the essential from the unessential, the positive from the negative. Common sense attends only to those relations that rouse its interest, and all others it dismisses as unimportant. And as the attributes so selected are simply the most superficial, the knowledge of common sense is necessarily more "general" than the knowledge of science. What by the plain man is regarded as essential, is passed over as unessential by the scientific man; the interest of the latter lies in the more recondite properties of things, and hence those commonly known are taken for granted and lightly passed over. Science, as such, however, does not deny the reality of the ordinary relations; that is left for the empirical philosopher, who plumes himself upon the exclusive accuracy with which he formulates scientific procedure. When you know that $7+5=12$, you cannot be forever repeating the slow process of adding unit to unit. So, when the common properties of things are once known, they are as a matter of course taken for granted, and henceforth treated as $= x$. Hence the seeming abstractness of scientific knowledge, as compared with ordinary knowledge. But the abstractness is only seeming; we cannot be always going back to the very beginning of knowledge, but must take something for granted, and start afresh. Thus, science, without denying established relations, widens the area of existence, and increases the complexity of knowledge. It is by a reciprocal analysis and synthesis that science comes to classify one set of relations as essential and another set as unessential. But, as no real properties are unessential in the last resort, the distinction is an artifice of science, not one determining the nature of real existence itself. Mr. Lewes's mistake is that of all empiricists; he takes the real world, in the plenitude of its known relations, and this he supposes to be known by a "synthesis of sensibles." That is to say, the presentations of sense reveal existence as it truly is; and hence science, as contemplating only special aspects of existence, stands in unfavourable contrast to the knowledge of common sense. But, in the first place, sense does not give real objects, for it gives of itself nothing at all; and, secondly, supposing it did, it would be "synthetic" only by including scientific knowledge as a part of universal knowledge. On the first point, nothing more needs to be added. The second point brings out the fallacious procedure of empiricism into especial prominence. Mr. Lewes contemplates the real world after the completion of the long process by which it has been manifested to intelligence, or, more correctly, after intelligence has manifested itself in it; and attending only to a part of that process at a time, he plausibly tells us that science deals only with "generalities." Most assuredly it does, if we contemplate the intelligible world as a whole; most assuredly it does not, if we are speaking of it as compared with ordinary knowledge. As the part is always less than the whole, and therefore more abstract, to say that the world as it interests science is partial or abstract, compared with the world in the plenitude of its relations, is no doubt a true, if not a very instructive remark; but to maintain that scientific knowledge is more abstract than that common-sense knowledge from which it starts, and which it is its one object to extend, is an utter perversion of the truth.

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[1] *Problems of Life and Mind*, vol. ii., p. 255.

The opposition of induction and deduction is but another aspect of the false separation of synthesis and analysis. There is a real justification, from the point of view of scientific knowledge, in separating the one aspect from the other, and there is no practical harm done in regarding each as a separate process. For science rests upon an unformulated abstraction from intelligence, and rightly regards its task as complete when it has set forth those relations that in their totality express the realm of Nature. It is otherwise with philosophy, which proposes to itself the more ambitious task of formulating existence as a whole, and therefore essays to show the ultimate relations of nature and intelligence. Science, as has been reiterated, perhaps to weariness, is interested only in certain aspects of reality, and hence it takes for granted the relations of things familiar to common sense. Things, as partially qualified, are its points of departure, and its own peculiar procedure consists in extending and widening common knowledge. Thus it may rightly enough be said to proceed "from the known to the unknown," or, as I should prefer to say, from the less to the more known. This is what science knows as induction.

It is rightly held that no advance in knowledge is possible by what syllogistic logic calls deduction, since by a mere restatement of that which is already assumed to be known no advance to the "unknown" can possibly be made. We cannot, therefore, wonder at the contempt of science for "mere conceptions." The contempt is a healthy one. The man of science knows that to gain any real knowledge he must begin where common sense leaves off; that to know more about existence he must go out beyond ordinary conceptions of existence. Empirical logic, here following scientific thought, also asserts that knowledge is gained by a discovery of new relations of things; and, so far, it is correct. But, as it falsely asserts that our common knowledge of things is acquired by passive observation, it takes for granted that individual things, or particular "facts," are discerned without any constructive activity of intelligence. Hence, the discovery of new relations is supposed still to leave individual things in their isolation. The only change in things is in their greater complexity. The real world is now supposed to have, independently of intelligence, all the properties revealed by science, as well as those known in ordinary knowledge. Induction now assumes quite a different aspect. It consists in the separation, one by one, of properties already assumed to be known, and hence it is no longer a progress from "the known to the unknown," but a regress from the more to the less known. By abstraction, it is supposed, a general law is discovered; and this law, once discovered, may be shown to apply to the particular facts from which it was abstracted. The process of reasoning down from the general law to the particular facts is deduction. Now here we have a confusion between a universal as a law of nature and a universal as an abstract conception. If nature is already known in the fulness of its relations, what possible sense is there in seeking for laws of nature, which are but special groups of relations considered apart? If everything is known already, there is no need either of induction or deduction. By a bare intuition we may comprehend all things, and any process of knowledge is not only useless, but impossible. Thus, the measure of truth which empirical logic had attained to in the judgment that knowledge proceeds "from the known to the unknown" is again lost in a theory of deduction, that, assuming a perfectly known world to begin with, can only explain the process of knowledge as a retreat from the better known to the less known. If we take the first, and relatively correct notion of induction as a progress from the less to the more known, we may easily give it a form that will correctly embody the true process of knowledge. Every advance in knowledge is the discovery of a new relation, and every new relation is, from its connection with intelligence, necessary and universal. Thus scientific knowledge does not first reveal a number of disconnected particulars, and then proceed to combine them into a general law. The law is discerned in the discernment of the particulars. A law is neither more nor less than a complex of relations, and all relations are *ipso facto* universal and necessary. The distinction between "fact" and "law" is a purely relative one. A fact is not by itself regarded as a law, but it contains the universal element which is characteristic of law. In speaking of facts, we are looking rather at the particular than the universal aspect of relations; in speaking of a law, we contemplate the universal rather than the particular aspect. But there is no real separation in reality or in knowledge. That which is real is necessarily universal, and there is no universality apart from reality. Induction emphasizes the particular aspect of reality. Deduction emphasizes the universal. In the one, it is said, we go from the particular to the universal; in the other, from the universal to the particular. Correctly stated, there is no "going" from the one to the other at all, for each exists only in and through the other. If the particular did not imply the universal, no combination of particulars would be possible, and hence there could be no universal law; the universal separated from the particular is no law, but a barren abstraction. The true process of knowledge is, therefore, one combining these two aspects of knowledge in one indivisible act. There is not pure induction or pure deduction, but both; and the separation of the one aspect from the other, however convenient it may be to the individual enquirer, is but a logical artifice, that in no way affects the real indivisibility of the one dialectic process.

(2.) Conception, as it is understood by formal logic, is essentially distinct from conception in the sense of a law of nature. The latter is obtained, not by abstracting from the specific differences of things, but by recognizing in things the concrete relations to each other which they involve. What in the scientific comprehension of the world seems to be a process of abstraction or analysis is really a process of concretion, or combined analysis and synthesis. The fallacy upon which the ordinary account of conception rests is, however, not unnatural. In the development of knowledge from simple apprehension to scientific conception, individual objects are apparently given to us in their completeness independently of any activity of thought. To the scientific man, as we may say, the facts of observation are "given," to be subsumed under a law. And this law, from the point of view of the individual discoverer, naturally appears to be a mere conception in his own mind, under which he externally brings the facts presented to him. But as a conception is a law of nature only when it correctly formulates the actual relations of things, no mere conception has any objective value. Taken by itself, a conception is therefore simply an abstraction from the concrete relations of which it is a symbol. Formal logic, however, overlooking altogether the implicit relation of facts to intelligence, assumes that what may correctly enough be said to be "given" to science is "given" to thought; and, as all the concreteness of reality then falls into apprehension, the activity of thought can manifest itself only as a process of abstraction. The confusion of an abstract conception with a concrete or scientific conception goes back in the history of thought to Socrates, if not further still; but it was first developed in the Aristotelian doctrine of the syllogism from the Platonic method of division, a doctrine which is itself implicit in the Socratic conception of definition as an analysis of the meaning of a common name. The principle of the syllogism is that in reasoning we bring an individual under an abstract conception. The most perfect form of reasoning will therefore be that in which an individual is subsumed under the most abstract conception of all. Syllogism thus presupposes that the highest conception is the most abstract. Thus we have at the top of the logical ladder the conception of being, and coming gradually downwards we at last reach the infinity of separate individual things given in simple apprehension, and included under that conception. Any given syllogism expresses a particular stage in the descent from the abstract to the concrete. Thinking, therefore, consists in all cases in advancing from the concrete to the abstract, or in going back from the abstract to the concrete by the way we came. Suppose, for example, that we begin with the conception "gold." In accordance with the Socratic demand for definition, we ask, What is "gold?" Now of course we may easily give an answer that shall indicate the actual process of knowledge. If we know nothing about "gold" but its superficial properties, by classifying it among the metals we distinguish it from things that are not metals. But the doctrine of syllogism does not contemplate this view of the case. Assuming that "gold" is already known by simple apprehension to be a "metal," it formulates that knowledge in the proposition, "gold is a metal." As the term "metal" is more abstract than the term "gold," we have here brought a relatively concrete conception under a conception relatively abstract. We may now suppose a second question to be asked, viz., What is a "metal?" the answer to which may be that "a metal is a substance." Here again a conception is put under another more abstract than itself. Thus we obtain the syllogism:

> A metal is a substance;
> Gold is a metal;
> Therefore, gold is a substance.

The syllogism thus rests upon the purely quantitative relation of whole and part. Now the imperfection of this doctrine is not far to seek. Put forward as an account of the process of thought, it completely fails to formulate that process as it really is. To bring an individual under an abstract notion adds nothing to knowledge. To say that "gold" belongs to the class "metal" tells us nothing but what we are assumed already to know, and hence syllogistic logic is no explanation of thought at all. Hence the fallacy of the supposed process of abstraction by which class notions are formed; hence the elaborate trifling of the whole doctrine of conversion, opposition, reduction, &c., with its bewildering maze of subtleties, interesting to no living creature but one who can be contented to dwell in the realm

> "Where entity and quiddity,
> The ghosts of defunct bodies fly."

The fallacy underlying the Aristotelian doctrine of syllogism has its source in the same mistake as caused Plato, in one phase of his ideal theory, to identify the universal with an abstract idea. It is wrongly assumed that the "sensible" is given in an immediate apprehension which is absolutely exclusive of any relation of thought. Real objects, constituted of various properties, are first, it is supposed, revealed as wholes in an immediate presentation of sense; and then thought, of its own arbitrary choice, selects a certain number of those properties and sets them apart for special contemplation. A general conception is thus formed, differing from the individual concretes simply in the absence of certain properties. By successive generalizations we go further and further away from the concrete objects with which we started, until at length we reach the abstraction of "being." In reasoning we reverse the process and descend from the abstract to the concrete. What proceeding could be more superfluous than this monotonous ascent and descent of the same logical tree! Syllogistic logic is necessarily barren of all results. We may go on in this way for ever, combining, separating, and recombining, without ever moving a step beyond the narrow circle of ideas within which we have shut ourselves. For, while sense is said to give us a definite object to reflect about, it can give us that object only as it first presents itself in simple apprehension. The attributes thus apprehended and fixed in a common name are few and superficial. The real wealth of knowledge, which is found in the concrete relations discovered by the special sciences, is not embodied in common names; and even the meagre knowledge we are supposed to have obtained in immediate perception, we are condemned by the doctrine of syllogism to attenuate still more. We may indeed, when we have attained to perfect purity for conception in mere "being," return to the individuals from which we set out; but this affords us no new knowledge, and our toilsome ascent and descent has been to no purpose whatever.

The principle which dominates Kant's theory of knowledge is in irreconcilable antagonism with that upon which syllogistic logic rests. It denies that individual objects can be known to exist apart from the relations of thought by which they are made knowable. But Kant, while removing the basis on which formal logic rests, is only half aware of the revolution he has himself accomplished. Side by side with the categories, he allows the abstract conceptions to stand. All that he is prepared to say amounts in effect to this, that the latter belong to the sphere of ordinary knowledge, while the former belong to the ultimate constitution of thought, and must therefore be presupposed as the condition of any real knowledge whatever. That the "manifold" is somehow "given" to thought, Kant is unable to get out of his head, and hence, insist as he may on the fact that concrete objects are not apprehended by sense alone, he yet grants that something is apprehended or received passively into the mind. An abstract and a pure conception, as he thinks, agree in so far as both reduce knowledge to unity by the combination of differences. In reality, however, abstraction is not a process of combination, but a process of separation; and individual concretes are not by such a process raised to a higher unity, but on the contrary divested of the unity which at first they possessed. On the other hand, the categories really combine the particulars of sense, or rather, as Kant would say, make that combination possible; and the unity so produced is the real unity of concrete objects and specific connections of objects.

(3.) The attempted assimilation of mere fictions of abstraction with real conceptions leads to an imperfection in Kant's way of looking at the categories themselves. A category is a universal or form of thought, which is potentially a synthesis of the manifold of sense. It is, in fact, as treated by Kant, virtually a function of synthesis. But as the forms of the mind stand in stiff and abrupt contrast to the manifold, the categories are held to belong to the constitution of the intellect, while the particulars of sense are supplied to the mind in an external way. Accordingly, as before the forms of perception were held to belong only to us as men, so now the forms of thought are regarded as preventing us from getting beyond the limits of experience. It is true that the categories might apply to a manifold different from that actually given to us; but this possibility of extending our knowledge beyond experience is of no avail, since no other than a sensuous manifold can be apprehended by us.

I shall not here repeat what has been said above in regard to the absurdity of supposing the particular element to be given in any other sense than that in which we may say, with equal propriety, that the universal element or category is given; it will be enough to point out that, when we have got rid of this contrast of activity and receptivity, the abstract isolation of the categories from the other elements of knowledge is completely done away with. The category in itself is spoken of by Kant as if it had a sort of independent existence of its own. It is a potential form of thought belonging to the framework of the mind, and capable of coming into actual use only in relation to the manifold of sense as determined in time by the pure imagination. But, just as the manifold of sense is simply the particular element in every real act or product of knowledge, taken in abstraction from its relation to the universal element, and as the schema is simply the abstraction of the relation of those elements to each other, so the category is but the universal element, with its relation to the particular eliminated. In other words, the apparent independence of the category is due entirely to the reflection of the individual thinker. We *distinguish* the universal from the particular, but every real act of knowledge is the mutual reflection of the one on the other. There is therefore no propriety in saying that the categories *might* be extended beyond experience, provided that a manifold different from that given to us were supplied to them. One element of knowledge can by no possibility exist except in its relation to the other; if the particular is nothing apart from the universal, neither is the universal anything apart from the particular. Kant virtually admits that his distinction of the categories from the schemata is merely a temporary stage of thought when he speaks of imagination as "the effect of the understanding on the sensibility"; for here what he elsewhere regards as a product of pure imagination is affirmed to be a product of the relation between the categories and the manifold of sense. Of course the schemata imply the specific manifold of space and time, and therefore partly belong to the metaphysic of nature, as distinguished from the metaphysic of knowledge in general; but in an investigation into the conditions of knowledge this specific element does not properly come under consideration. The categories are therefore simply the universal aspect of knowledge, as logically distinguished from the particular aspect, and abstracted from the relations which give them meaning and significance.

(5.) So much has just been said in regard to conception, that a very few words in regard to judgment as treated by Kant will be sufficient. As the categories are potentialities of synthesis, so judgment is the act of synthesis itself. The manifold of sense has to be reflected on the universal forms of thought and perception before there can be any real knowledge, and this process of reflection is judgment. We must, therefore, free our minds from the misleading associations which arise from the attempted assimilation of the analytical and the synthetical judgment. "To think," Kant tells us, "is to judge," and judging consists "in referring conceptions to objects through perceptions." Now, in strict propriety, this formula is only applicable to the analytical judgment of formal logic, which rests upon the supposition that objects, with the full complement of their attributes, first exist full-formed in consciousness, and are afterwards referred to an abstract universal. Accordingly, if we follow the letter of Kant's account of judgment, we are naturally led to suppose that objects as such being given in perception, the understanding proceeds to apply to them its categories. It is under this misapprehension that Mr. Lewes[1] and others charge Kant with holding that sense and thought contribute different *kinds* of knowledge. His real thought is, that by the application of the categories to the *element* of knowledge given in sense, objects are first constituted as objects. At the same time the admission of a purely formal judgment at all is inconsistent with the Critical account of knowledge, and Kant is himself partly to blame for the misapprehension of what his real doctrine is. Rejecting the analytical judgment altogether, we must regard all judgments as synthetical, *i.e.*, as constitutive of objects as such, and of their connexions. And this constitution of reality is simply another name for the synthesis of pure imagination, which, when freed from its psychological taint, is seen to be simply the process of relating a universal or category to a particular or manifold.

6. The last element in real knowledge distinguished by Kant is the self, as the supreme condition of all unity in knowledge. In his usual fashion, Kant speaks of the self as if it had a sort of independent reality of its own, apart from all relation to the other elements of knowledge. I = I is, he says, a purely analytical proposition. Now, such a proposition is not only tautological but meaningless. Only by bringing the "I" into relation with knowable objects can we put any meaning into it at all. If we attempt to comprehend the "I" purely in itself, we find that it is a mere abstraction. And if the "I," taken in its utmost

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[1] *Problems of Life and Mind*, vol. i., p. 442.

purity is, as Kant himself asserts, but a logical element in real knowledge, there is no propriety in saying that the self *may* be independent of the limitations which apply to phenomena. No doubt intelligence, as the source of all knowledge, is in a sense independent of the objects which it constitutes, but it is not for that reason constituted of itself apart from its relations to objects. Moreover, while each individual as possessed of intelligence is capable of recognizing the real world, which itself exists only in its relations to universal intelligence, we are not entitled to say that the individual man, with his complex rational and animal nature, is free from the conditions without which he could not exist at all. I, as a particular person, with my own specific character and idiosyncrasy, am a real being, and in virtue of my rationality am recognized by myself to be real; but this does not cut me off from the special conditions of knowledge or action without which I could not be, or be known to be, human. The development of this point, however, belongs to psychology. Here it is enough to remark that the "I" cannot be separated from its relations without becoming a barren abstraction. Intelligence exists only in and through its specific modes, and it is useless to attempt sublimating it by isolating it from those modes: instead of elevating we merely degrade it. The categories and the particulars of knowledge are therefore simply the various real relations in which intelligence manifests its activity, and builds up for each of us the fair fabric of nature.

THE END.

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